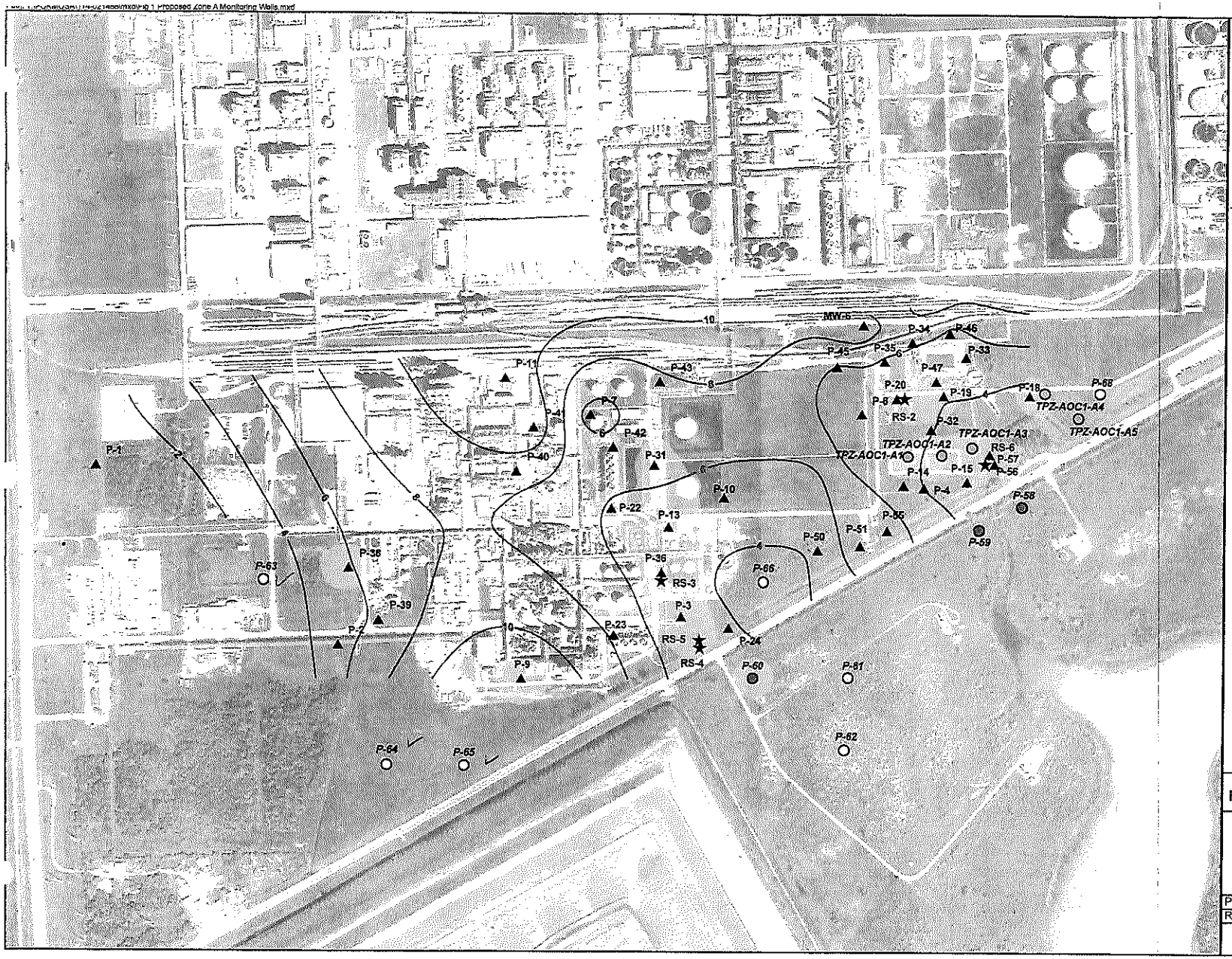
TABLES

Table 1. Proposed Sampling Program
Supplemental AOC Characterization Work Plan
Pre-1990 Area - FPC-TX

		Well ID	Estimated Depth	Screen Length	CAO Supported	Rationale
AOC-1	Zone A	P-68	15 - 20 ft	5 ft	CAO 1	Evaluate possible extent of impacted Zone A groundwater east of TPZ-AOC1-A4 and P-18
	Zone B	B-1	45 - 50 ft	5 - 10 ft	CAO 1, CAO 2	Install Zone B well in vicinity of P-56 as this is the furthest downgradient location accessible in this area. Monitoring well may be converted to a recovery well.
		B-2	45 - 50 ft	5 - 10 ft	CAO 1, CAO 2	Install Zone B well in vicinity of SMW-A1(P-58) as potential downgradient point relative to TMP-AOC1-B1
		B-3	40 - 45 ft	5 - 10 ft	CAO 1	Evaluate possible extent of impacted Zone B groundwater east of D-33; replace existing damaged Zone B well P-16.
		B-4	45 - 50 ft	5 - 10 ft	CAO 1, CAO2	Evaluate possible extent of impacted Zone B groundwater east of TPZ-AOC1-B1
	Zone C	D-45	80 - 100 ft	10 ft	CAO 1, CAO 2	Install Zone C well in vicinity of P-56 as this is the furthest downgradient location accessible in this area. Zone C well is required to monitor potential vertical migration of impacted Zone B groundwater.
		D-46	80 - 100 ft	10 ft	CAO 1	Install Zone C well east of D-34/D-44 in general vicinity of D-33/D-43 to evaluate potential lateral extent of impacted Zone C groundwater and provide vertical control for Zone B impacts in this area.
AOC-2	Zone A	P-61	20 ft	5 ft	CAO 1	Evaluate possible extent of impacted Zone A groundwater on Former Brookings Property in vicinity of SMW-A3 (P-60).
		P-62	20 ft	5 ft	CAO 1	Evaluate possible extent of impacted Zone A groundwater on Former Brookings Property in vicinity of SMW-A3 (P-60).
		P-66	20 ft	5 ft	CAO 1	Evaluate possible extent of impacted Zone A groundwater along property boundary between P-50, P-36, and P-3. Based on EDC detections at P-50 and P-51 in 4th Q2012 sampling.
	Zone B	B-5	45- 50 ft	5 - 10 ft	CAO 1	Evaluate possible extent of impacted Zone B groundwater east of TPZ-AOC2-B2
		B-6	45- 50 ft	5 - 10 ft	CAO 1	Former Brookings property well to provide geologic and potentiometric control to the south and provide distant Zone B lateral control.
		B-7	45- 50 ft	5 - 10 ft	CAO 1	Install Zone B well southeast of TMP-AOC2-B2 as far downgradient as possible north of the road.
		B-8	45- 50 ft	5 - 10 ft	CAO 1	Install Zone B well south of TMP-AOC2-B1 as far downgradient as possible north of the road.
	Zone C	D-47	80 - 100 ft	10 ft	CAO 1	Provide far down-gradient Zone C control to southeast of primary AOC-2 VCM Area impacts. May also provide vertical control for outlying Zone A monitoring wells P-9 and P-38.
P-9/P-38 Area	Zone A	P-63	20 - 25 ft	5 ft	CAO 1, TRRP	Install Zone A well west (down-gradient) of P-38 to evaluate potential lateral extent of impacted Zone A groundwater
		P-64	20 - 25 ft	5 ft	TRRP	Provide additional area characterization in accordance with TRRP, evaluate geological and potentiometric conditions in area between P-9, P-38, and Alcoa mud lakes.
		P-65	20 - 25 ft	5 ft	TRRP	Provide additional area characterization in accordance with TRRP, evaluate geological and potentiometric conditions in area between P-9, P-38, and Alcoa mud lakes.

NOTE: Estimated depths for planning purposes only. The actual depth of each well should be determined by a competent geologist during drilling activities.

FIGURES



Legend

- Proposed Zone A Monitoring Well
- New Monitoring Well - August 2012
- Temporary Piezometer - August 2012
- Monitoring Well
- Recovery Well
- Potentiometric Surface Map
- PCL Exceedence Zone for VOC > $^{GW}GW_{ing}$

Note:
GW contours based on 1st quarter 2012 data. PCLE zone based on 1st quarter 2012 data and data from the new wells.

New monitoring wells SMW-A1,SMW-A2, and SMW-A3 are renamed as P-58, P-59, and P-60, respectively.

N

0 500 1,000 Feet

Source: Aerial flown by United Geo Technologies, LLC. April 2012.

FORMOSA PLASTICS CORPORATION

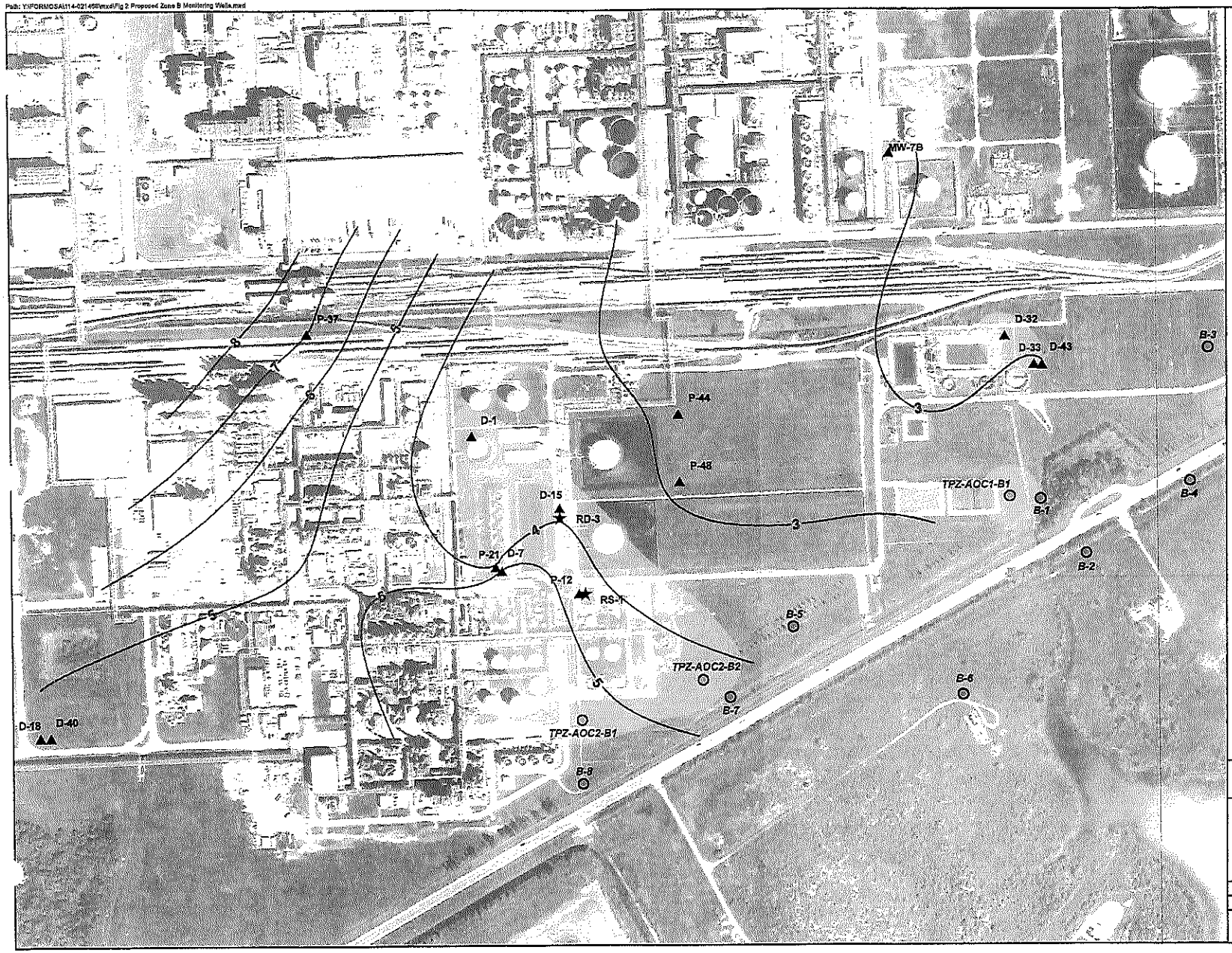
FIGURE 1

PROPOSED ZONE A MONITORING WELLS

PROJECT: 021466	DATE: FEB 2013	
REV: 00	BY: SMM	CHECKED: EAK

TETRA TECH
COMPLEX WORLD, CLEAR SOLUTIONS

Path: Y:\FORMOSA\114-021466\mxd\Fig 2 Proposed Zone B Monitoring Wells.mxd



Legend

- Proposed Zone B Monitoring Well
- Temporary Piezometer - August 2012
- Monitoring Well
- Recovery Well
- Potentiometric Surface Contours
- PCL Exceedance Zone for VOC > $^{GW}GW_{ing}$

Note:
GW contours based on 1st quarter 2012 data. PCLE zone based on 1st quarter 2012 data and data from the new wells.

N

0 350 700 Feet

Source: Aerial flown by United Geo Technologies, LLC, April 2012.

FORMOSA PLASTICS CORPORATION

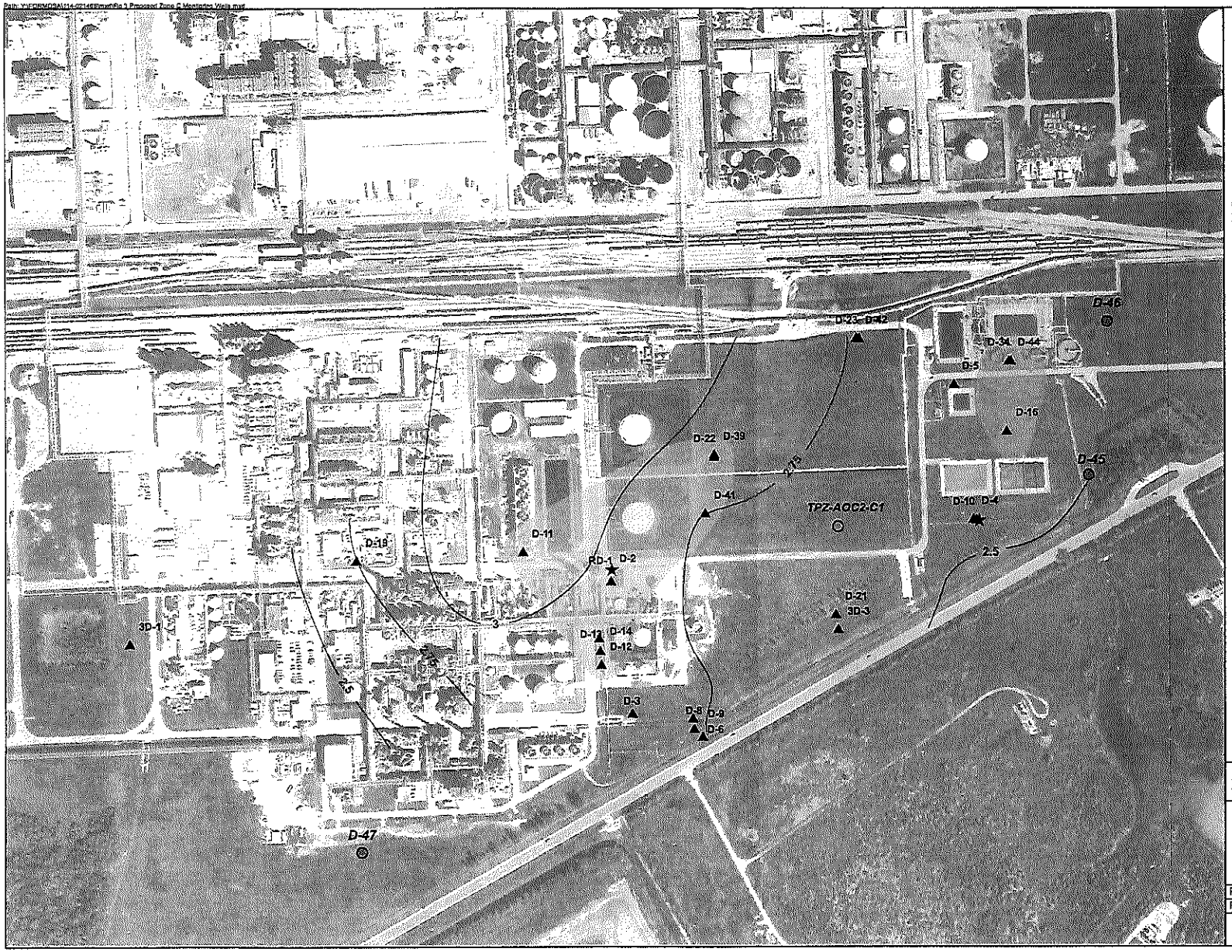
FIGURE 2

PROPOSED ZONE B MONITORING WELLS

PROJECT: 021466	DATE: FEB 2013
REV: 00	BY: SMM | CHECKED: EAK

TETRA TECH
COMPLEX WORLD, CLEAR SOLUTIONS

Path: Y:\FORMOSA\021466\mxd\Fig 3 Proposed Zone C Monitoring Wells.mxd



Legend

- Proposed Zone C Monitoring Well
- Temporary Piezometer - August 2012
- Monitoring Well
- Recovery Well
- Potentiometric Surface Contour
- PCL Exceedance Zone for VOC > $^{GW}GW_{Ing}$

Note:
GW contours based on 1st quarter 2012 data. PCLE zone based on 1st quarter 2012 data and data from the new wells.

N

0 350 700 Feet

Source: Aerial flown by United Geo Technologies, LLC. April 2012.

FORMOSA PLASTICS CORPORATION

FIGURE 3

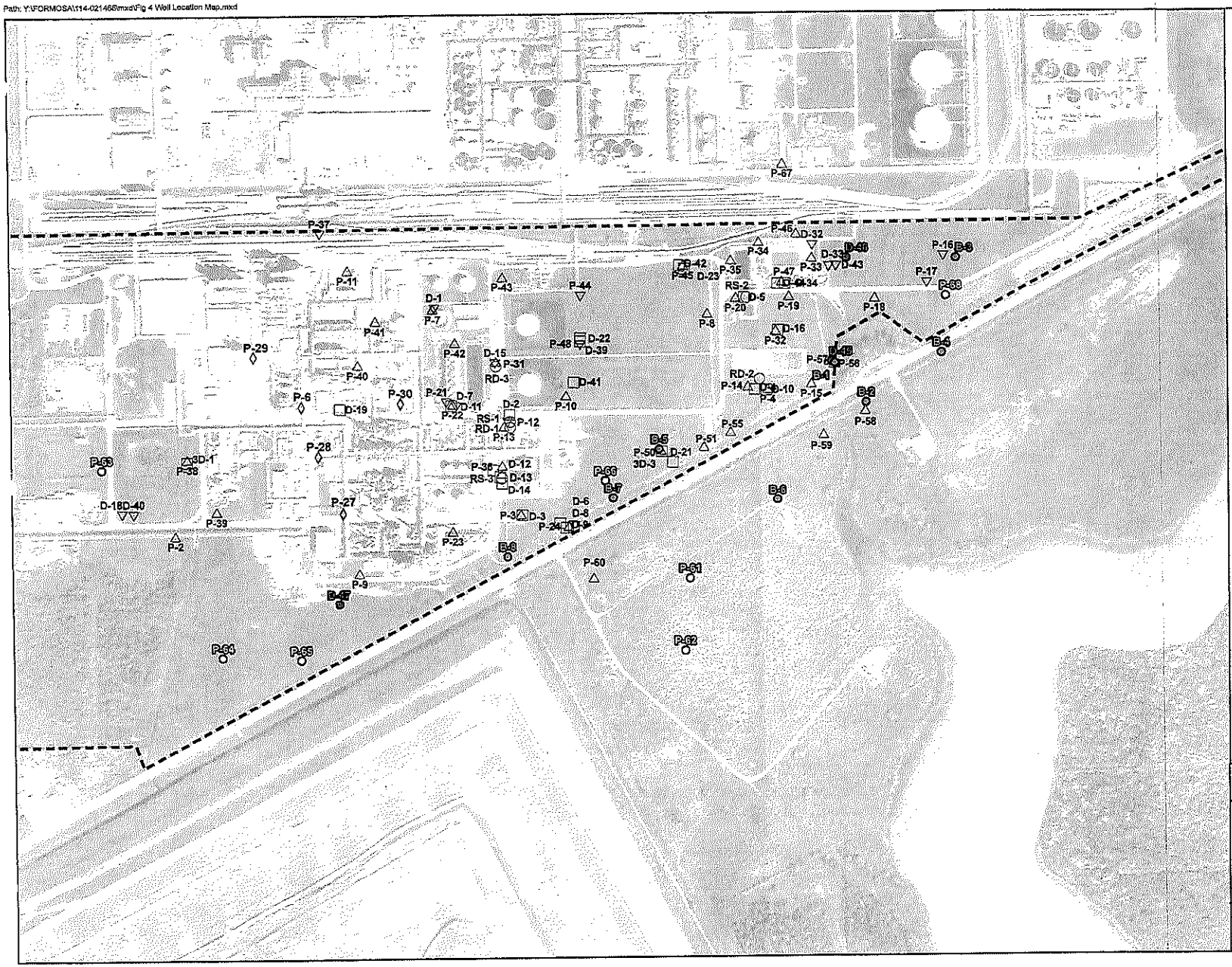
PROPOSED ZONE C MONITORING WELLS

PROJECT: 021466	DATE: FEB 2013
REV: 00	BY: SMM CHECKED: EAK

TETRA TECH

COMPLEX WORLD, CLEAR SOLUTIONS

Path: Y:\FORMOSA\114-021466\mxd\Fig 4 Well Location Map.mxd



Legend

- Zone A Proposed Monitor Well
- Zone B Proposed Monitor Well
- Zone C Proposed Monitor Well
- Zone P Monitor Well
- Zone A Monitor Well
- Zone B Monitor Well
- Zone C Monitor Well
- Recovery Well

Note:
New monitoring wells SMW-A1, SMW-A2, and SMW-A3 are renamed as P-58, P-59, and P-60, respectively.

N

0 500 1,000 Feet

Source: Aerial flown by United Geo Technologies, LLC. April 2012.

FORMOSA PLASTICS CORPORATION

FIGURE 4

GROUNDWATER MONITORING WELL LOCATION MAP

PROJECT: 021466	DATE: FEB 2013
REV: 00	BY: SMM | CHECKED: EAK

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Corrective Action Strategy Work Plan
AOCs 2, 6a, and 8
Expansion Area

Formosa Plastics Corporation - TX

March 8, 2013

complex world

CLEAR SOLUTIONS™

cc: Ms. Maureen Hatfield, (MC-127)
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Corrective Action Strategy Work Plan
AOCs 2, 6a, and 8
Expansion Area

Prepared for:

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Point Comfort, Texas

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Tetra Tech Project No. 114-021419

January 11, 2013

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

AOC	Area of Concern
CAFO	Consent Agreement and Final Order
CAS	Corrective Action Strategy
COC	Chemical of Concern
C-O-C	Chain-of-Custody
CSM	Conceptual Site Model
EPA	U.S. Environmental Protection Agency
FPC-TX	Formosa Plastics Corporation, Texas
IDW	Investigative Derived Waste
PAH	Polynuclear Aromatic Hydrocarbon
PCL	Protective Concentration Level
PPE	Personal Protective Equipment
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
SPVC	Specialty Poly-vinyl Chloride
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TCEQ	Texas Commission on Environmental Quality
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbon
TRRP	Texas Risk Reduction Program
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

In accordance with Section VII, Paragraph 32, of the 3008(a) Consent Agreement and Final Order (CAFO), Formosa Plastics Corporation, Texas (FPC-TX) has prepared this work plan to pursue focused investigations to address the Areas of Concern (AOCs) identified by U.S. Environmental Protection Agency (EPA). EPA approved the Scoping Meeting Summary (Tetra Tech, 2012) via letter dated November 13, 2012 (EPA, 2012) and identified three AOCs which require additional investigation:

- AOC-2: Soil Debris Piles Northeast of New Specialty Poly-vinyl Chloride (SPVC) Facility;
- AOC-6a: Wash Down Pad; and
- AOC-8: Civil Maintenance Area with Railroad Ties and Scrap Metal.

2.0 SUMMARY OF EXISTING ENVIRONMENTAL DATA

There are no existing soil and groundwater data available for the three AOCs included in this work plan with the exception of a one-time soil sampling event conducted at AOC-2, the Soil Debris Piles Northeast of the New SPVC Facility.

2.1 AOC-2 Soil

On October 3, 2011, FPC-TX collected grab soil samples in order to characterize the AOC-2 soil piles. Six grab samples were collected at depths of six to 12 inches. Samples were analyzed for total petroleum hydrocarbons (TPH) via Method TX 1005 and toxicity characteristic leaching procedure (TCLP) volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), and metals. All analytical results were reported as below detection limits with the exception of four metals:

- Barium – detected in six samples at concentrations ranging from 0.7 to 1.4 mg/l;
- Selenium – detected in four samples at concentrations ranging from 0.011 to 0.02 mg/l;
- Antimony - detected in one sample at a concentration of 0.016 mg/l; and
- Nickel – detected in one sample at a concentration of 0.045 mg/l.

3.0 GENERAL TECHNICAL APPROACH

3.1 General Technical Approach

Paragraph 32, of the CAFO directs FPX-TX to prepare a work plan in accordance with the 2008 Region VI Corrective Action Strategy (CAS) (EPA, 2008) to address data gaps in the conceptual site model (CSM). The CSM as defined by CAS consists of six elements: facility profile, land use and exposure profile, ecological profile, physical profile, release profile, and risk management profile. Appendix A of the CAS includes detailed discussion and guidance regarding the CAS CSM profiles. As described in Section 1 of Appendix A, the first step for the risk manager is to identify known releases, or other potential sources and incorporate all available information into the six profiles. Although EPA has identified three AOCs that require investigation, currently there is no data indicating that a release has occurred or that potential chemicals of concern (COCs) are present in media at any of the three areas of concern, thus the initial step in developing a conceptual site model for each AOC is determining if a release to the environment has occurred. To that end, this work plan will focus on preliminary sampling at each AOC to determine if COCs are present at concentrations greater that applicable Texas Risk Reduction Program (TRRP) protective concentration levels (PCLs). In the event that COCs are detected at concentrations greater than applicable PCLs, a CSM identifying potential COC migration pathways and potential receptors will be developed, data gaps established, and a supplemental work plan developed to more fully characterize the impacted AOCs and address data gaps in the CSM.

3.1.1 AOC-2: Soil Piles

AOC-2, Soil Debris Piles Northeast of New SPVC Facility, is a soil stockpile area associated with facility expansion construction activities. The area consists of multiple discreet piles of soil placed within an approximate 5-acre area. In addition to the discreet soil piles, the area appears to be elevated several feet above the natural grade indicating that much of the area is imported soil fill. There are also concrete piles from foundation construction in piles throughout the area.

Before construction was initiated for the new SPVC facility, the SPVC area was undisturbed open land with no facility operation thus the soil stockpiled in the AOC-2 area is assumed to be clean as supported by the previously completed TCLP testing. Although there is no reason to suspect the presence of impacted soils in AOC-2 originating from SPVC facility construction

activities, in an abundance of caution FPC-TX will pursue a thorough investigation in this area including a wide range of potential COCs to confirm that COCs are not present above PCLs.

FPC-TX plans to advance five borings in the AOC to investigate the nature of the stockpiled soil material. Each borings will be advanced to an adequate depth to allow sampling of both the overlying soil pile and the underlying natural soil.

Based on a review of the general topography of the area and the visual inspection of the area, the soil pile area appears to be is built-up approximately 10 to 15 feet above the general elevation in the northern area of the FPC-TX facility. Soil borings will be advanced to a depth of approximately 16 feet below existing grade (the top of the pile area) to ensure that each boring terminates in native material. Soil samples will be collected on four foot vertical intervals, a total of four samples per boring, and will be analyzed for VOCs, SVOCs, and Resource Conservation and Recovery Act (RCRA) metals.

3.1.2 AOC-6a: Wash Down Pad

AOC-6a, Wash Down Pad, is a concrete area designed with elevated concrete berms intended to contain any residual liquids associated with the wash down and used oil transferring processes. During the Initial Scoping Meeting, EPA originally indicated that this area required only some "housekeeping," as there appeared to be some oil stained soil outside the bermed area. As documented in the Post-Scoping Meeting Information Transmittal, FPC-TX removed a thin layer of soil from this area revealing additional concrete. FPC-TX will collect soil samples at four locations around the AOC to further investigate the potential for TPH impacted soils from the wash down pad associated with this staining, as well as the wash down pad area at large.

Four borings will be advanced to a depth of four feet below grade. Samples will be collected at the natural grade surface and at two foot vertical intervals, for a total of three samples per boring. The samples will be analyzed for TPH via Methods TX 1005 and 1006.

3.1.3 AOC-8: Civil Maintenance Area with Railroad Ties and Scrap Metal

AOC-8, Civil Maintenance Area with Railroad Ties and Scrap Metal, was not included in the initial CAFO Exhibit 1 Solid Waste Management Unit (SWMU) and AOC list. Based on observations made during the Scoping Meeting visual site inspection EPA directed FPC-TX to include the area as an AOC requiring further investigation. AOC-8 includes two separate

locations of concern: a temporary railroad tie stockpile area and an area identified by EPA as the scrap metal area.

The location identified by EPA as the "scrap metal area" only contains usable metal parts for rail system maintenance. All of the usable metal parts in this area are associated with the rail system and are designed to be used outside thus do not require special storage or protection to remain usable. Metal parts stored in the area include smaller pieces such as railroad spikes and tie plates, typically stored in 55 gallon drums, although some pieces are simply stockpiled on the ground. Larger metal pieces including rail, railcar wheels, and axles are stockpiled on the ground. None of the material stored in this area is considered solid waste and there is no basis to conduct soil and/or groundwater investigations in this area. Scrap metal is in general placed in dedicated roll-offs and periodically shipped off-site via approved scrap metal handlers.

The railroad tie stock pile area, approximately 7,500 square feet in size, is used to temporarily stockpile railroad ties removed during maintenance. Ties that are in usable condition are offered for reuse. Remaining ties are disposed in an off-site solid waste landfill.

FPC-TX plans in advance three borings to investigate potential impacts to soil in the vicinity of the railroad tie pile. Borings will be advanced to a depth of four feet, with samples collected at the ground surface and at two foot intervals, for a total of three samples at each boring location. Samples collected in the railroad tie stockpile area will be analyzed for polynuclear aromatic hydrocarbons (PAHs).

3.2 Summary of General Technical Approach

The following bullets summarize the detailed discussion presented in the previous section. Section 4 provides details regarding specific proposed sampling locations and sample collection and handling procedures.

- AOC-2 Soil Pile
  - Advance five soil borings to a depth of 16 feet
  - Collect soil samples on four foot vertical centers at all of the boring locations (four samples per boring)
  - Analyze soil samples for VOCs, SVOCs and RCRA metals

- AOC-6a Wash Down Pad
  - Advance four soil borings
  - Collect soil samples on two foot vertical centers including a surface sample (three samples per boring)
  - Analyze soil samples for TPH

- AOC-8 Civil Maintenance Area with Railroad Ties and Scrap Metal
  - Advance three soil borings in the Railroad Tie Area
  - Collect soil samples on two foot vertical centers including a surface sample (three samples per boring)
  - Analyze soil samples for PAHs
  - No activities in the metal parts area

4.0 FIELD SAMPLING PLAN

4.1 General Procedures and Requirements

This section identifies sampling methods required to complete the proposed soil investigations summarized in Section 3. Table 1 documents the details of the proposed field activities.

4.2 Boring Locations and Estimated Depths

The Field Team Supervisor will field verify the location of each boring and will coordinate with the appropriate FPC-TX personnel to ensure that each location is clear of above and below ground obstructions and approved prior to installing the new borings. The Field Team Supervisor will also obtain any specific drilling permits, entry permits, and other applicable permits from the appropriate plant personnel. FPC-TX has a detailed dig permit process that requires sign-off from facility mechanical, electrical, and environmental personnel prior to all subsurface work to ensure that underground utilities are identified and avoided.

4.2.1 AOC-2

Five borings will be advanced within the AOC in order to collect soil samples (Figure 1). Soil samples will be collected at four foot vertical intervals to a total depth of 16 feet, approximately one to five feet below natural grade. An attempt will be made during boring installation to distinguish between fill and native material.

4.2.2 AOC-6a

Four borings will be advanced around the AOC (Figure 2). Soil samples will be collected at the surface and at two foot vertical intervals to a total depth of four feet (three samples per boring).

4.2.3 AOC-8

Three soil borings will be advanced within the railroad tie area (Figure 3). Soil samples will be collected at the surface and at two foot vertical intervals to a total depth of four feet (three samples per boring).

4.3 Soil Sampling

Soil borings will be installed using direct push drilling techniques to collect samples while minimizing the generation of investigation derived waste. Borings will be advanced to the depths indicated in Table 1. At AOC 2 soil cores will be collected on four-foot vertical intervals in stockpiled soil material. At AOCs 6a and 8 soil cores will be collected on two-foot vertical intervals in vadose zone soils. Soil samples intended for VOC analysis (AOC 2 only) will be collected in accordance with Method 5035. Following collection of the samples intended for VOC analysis, remaining soils from the sampling interval will be placed in a plastic baggie and thoroughly mixed. The mixed soils will then be placed in sample containers appropriate for the selected analysis. Sampling personnel will don new, sterile sampling gloves between each sample interval.

4.4 Sample Identification

Sample labels will be completed with indelible, waterproof ink. Label information includes the sample identification number (sample ID), the date and time of sampling, sample type (e.g., soil), as applicable.

The sample numbering and nomenclature system for soil samples will be as follows:

AOC-#- (Boring)-(Depth Interval)

AOC# = Area of Concern (2, 6a or 8)

Boring = Boring Specific Identifier (A, B…)

Depth Interval = 0-2, 2-4, 4-6, etc… (in feet)

4.5 Sample Handling and Custody Requirements

4.5.1 Sample Handling

Sample handling and custody requirements are intended to maintain control and document possession of environmental samples following sample collection through shipment to the analytical laboratory. Samples will be placed on ice in shipping coolers containing ice immediately following collection. The samples will be securely packed and shipped to the laboratory via an overnight courier service, generally on the day they are collected. If samples are not shipped to the laboratory the same day the samples are collected in the field, additional

ice will be placed in the coolers, the coolers will be sealed and kept in a designated secure area until they are shipped to the laboratory.

The sample packaging and shipping procedures summarized below will ensure that the samples arrive at the laboratory with the chain-of-custody (C-O-C) intact:

- The field sampler is personally responsible for the care and custody of the samples until they are transferred to another person or the laboratory. As few people as possible will handle the samples.
- Sample containers will be identified by using sample labels that include the date of collection, unique sample identification number, analyses to be performed and the name or initials of the sample collector.
- Sample labels will be completed for each sample using waterproof ink.
- Samples will be placed in coolers containing ice immediately after collection.
- Samples will be accompanied by a properly completed chain-of-custody form. The sample identification numbers will be listed on the chain-of-custody form. When transferring the possession of samples, the individuals relinquishing and receiving the samples will sign and record the date and time on the form. The chain-of-custody form documents sample custody transfers from the sampler to another person, to the laboratory, or to/from a secure storage area.
- Sample shipments will be accompanied by the chain-of-custody form identifying its contents. The form is completed by the sampling team which, after signing and relinquishing custody to the shipper, the sampling team receives a copy. The shipper, if different than the sampling team members, also receives a copy of the chain-of-custody after relinquishing custody to the laboratory.
- Samples will be properly packaged for shipment and dispatched to the appropriate laboratory for analysis with a separate signed chain-of-custody form enclosed in the shipping cooler. A custody seal will be affixed to the opening of the shipping cooler and cooler will be secured with packing tape for shipment.
- If the samples are sent by common carrier, a bill of lading will be used and copies will be retained as permanent documentation. Commercial carriers are not required to sign the C-O-C form as long as the form is sealed inside the sample cooler and the custody tape remains intact.

4.5.2 Chain of Custody

Proper sample handling and custody procedures ensure the custody and integrity of samples beginning at the time of sampling and continuing through transport, sample receipt, preparation, and analysis.

A sample is in custody if it is in actual physical possession or in a secured area restricted for access only to authorized personnel. The C-O-C form and custody seals are used to document

sample handling during transfer from the field to the laboratory and among contractors. The list of items below should be included on the C-O-C form.

- Date and time of collection;
- Site identification;
- Sample matrix;
- Container type;
- Number of containers;
- Preservative used;
- Notation if the sample was filtered;
- Analyses required;
- Name of collector;
- Custody transfer signatures and dates and time of transfer;
- Name of laboratory admitting the samples; and
- Bill of lading (if applicable).

4.6 Laboratory Analysis

Samples will be shipped to a Texas Commission on Environmental Quality (TCEQ) approved certified lab for analysis. The laboratory will provide a TRRP reporting package. The target reporting limits are TRRP Tier 1 PCLs for soil.

- AOC-2: Soil samples will be analyzed for VOCs via SW-846 8260B, SVOCs via SW-846 8270C, and RCRA Metals via SW-846 6010B.
- AOC 6a: Soil samples will be analyzed for TPH via TX1005 and TX1006.
- AOC 8: Soil samples will be analyzed for PAHs via SW-846 8270C.

4.7 Field Instrument/Equipment Testing, Calibration, Inspection, and Maintenance

Field equipment calibration requirements are contained in the manufacturer's documentation. All calibration will be conducted according to the manufacturer's specifications. Calibration will be conducted daily prior to use and recorded in the daily field log.

4.8 Decontamination Procedures

Site personnel will perform decontamination of equipment when brought on the site, between sample locations, when necessary between sample intervals, and before removing it from the site. Certain disposable equipment meant to be used only once and discarded will be decontaminated prior to use, unless the equipment is packaged, sealed, and accompanied by a certificate of analysis that indicates it has been pre-cleaned and tested.

Non-disposable components of the sampling equipment used to obtain samples that contact the soil will be decontaminated as follows:

- Potable water rinse;
- Phosphate-free detergent wash;
- De-ionized (DI) or distilled water rinse (3 times); and
- Air dry.

4.9 Management of Investigative Derived Wastes

Investigative derived waste (IDW) generated during field activities may include:

- Potentially impacted material including -
  - Limited drill cuttings and soil not used for samples; and
  - Decontamination wash water.
- General Trash including -
  - Personal protective equipment (PPE) including disposable coveralls and gloves;
  - Disposable equipment including plastic ground and equipment covers, aluminum foil, broken or unused sample containers, sample container boxes, tape, etc.; and,
  - Packing and shipping materials.

Potentially impacted IDW will be accumulated in 55-gallon drums or other appropriate containers and stored in a designated IDW storage area. These wastes will be characterized based on the analytical results from the sampling event and disposed of in accordance with applicable regulations. General trash will be gathered in heavy duty garbage bags and disposed in a plant designated solid waste disposal container.

4.10 Field Records and Boring Logs

Field data will be recorded on standard forms. Field data primarily will be direct observations, hand measurements, and/or direct-readings from field meters. These data will be tabulated and included in project reports or submittals, as appropriate.

Soil boring logs will be documented for all borings. Borings will be continuously sampled and logged for the entire depth of the boring. The lithologic description of the log will include soil type, color, grain size, texture, hardness, degree of induration, calcareous content, indications of contamination, and other pertinent information. Color will be described using the Munsell Color Chart. Soil type will be described using the Unified Soil Classification System (ASTM D 2488-00).

4.11 Surveying

All sample locations will be accurately depicted on a drawing, topographic or other standard map, or be referenced in such a manner that the location(s) can be firmly established. Each field measurement made should be traceable to the person(s) making the measurement. Soil borings will be recorded with a Trimble handheld XH-sub-meter GPS unit (or equivalent).

4.12 Soil Boring P&A Procedures

After completion of sampling activities at each boring, the boring will be abandoned by filling the hole. Borings will be plugged and abandoned in accordance with Texas Water Well Drillers Board Guidelines.

4.13 Quality Assurance

Quality control (QC) samples will include field duplicates, equipment blanks/rinse blanks, trip blanks, and MS/MSDs. The following table presents the QC samples and corresponding frequency of collection.

QC Samples and Corresponding Frequency of Collection

QC Sample	Frequency	Comment
Field Duplicate	At least one field duplicate sample will be collected for each matrix per AOC. A duplicate sample will be collected every 10 samples (10% frequency).	Field duplicate samples will be collected at the same location as the original sample. Field duplicate locations will be determined prior to field sampling and will be assigned an identification number that will not be identifiable as a duplicate (blind duplicate) by the laboratory.
Trip Blank	One per each cooler containing VOCs (AOC-2 only).	Trip blank consists of a VOA sample vial filled in the laboratory with ASTM Type II reagent grade water transported with sample containers and returned to laboratory for analysis of VOCs.
MS/MSDs	One MS/MSD will be collected for every 20 samples for each matrix at each AOC.	MS/MSDs will be collected in the same manner as the original sample and designated on the chain-of-custody (C-O-C).
Temperature Measurement	One temperature measurement per sample cooler.	Appropriate temperature measuring methods include measurement of the temperature of a temperature blank contained in the cooler. Infrared temperature measurement of an aqueous sample is also acceptable.

5.0 REPORTING

Upon completion of the field activities and receipt and validation of all analytical data, a report summarizing the sampling results will be prepared. The memorandum will summarize data collection methodology, deviations from the Work Plan, if any, and present the analytical and data validation results. Analytical results will be compared to TRRP Tier 1 PCLs. The report will also recommend if additional data is required.

6.0 REFERENCES

Tetra Tech, 2012. Tetra Tech, *Technical Memorandum – Initial Scoping Meeting Summary.* September 27.

U.S.EPA, 2008. U.S. Environmental Protection Agency, *Region 6 Corrective Action Strategy (CAS),* November.

U.S.EPA, 2012. U.S. Environmental Protection Agency, *Approval of the Scoping Meeting Summary for the Consent Agreement and Final Order (CAFO) U.S. EPA Docket No. RCRA-06-2012-0938; from Nancy Fagan, EPA, to R.P. Smith, Formosa Plastics Corporation – Texas.* November 13.

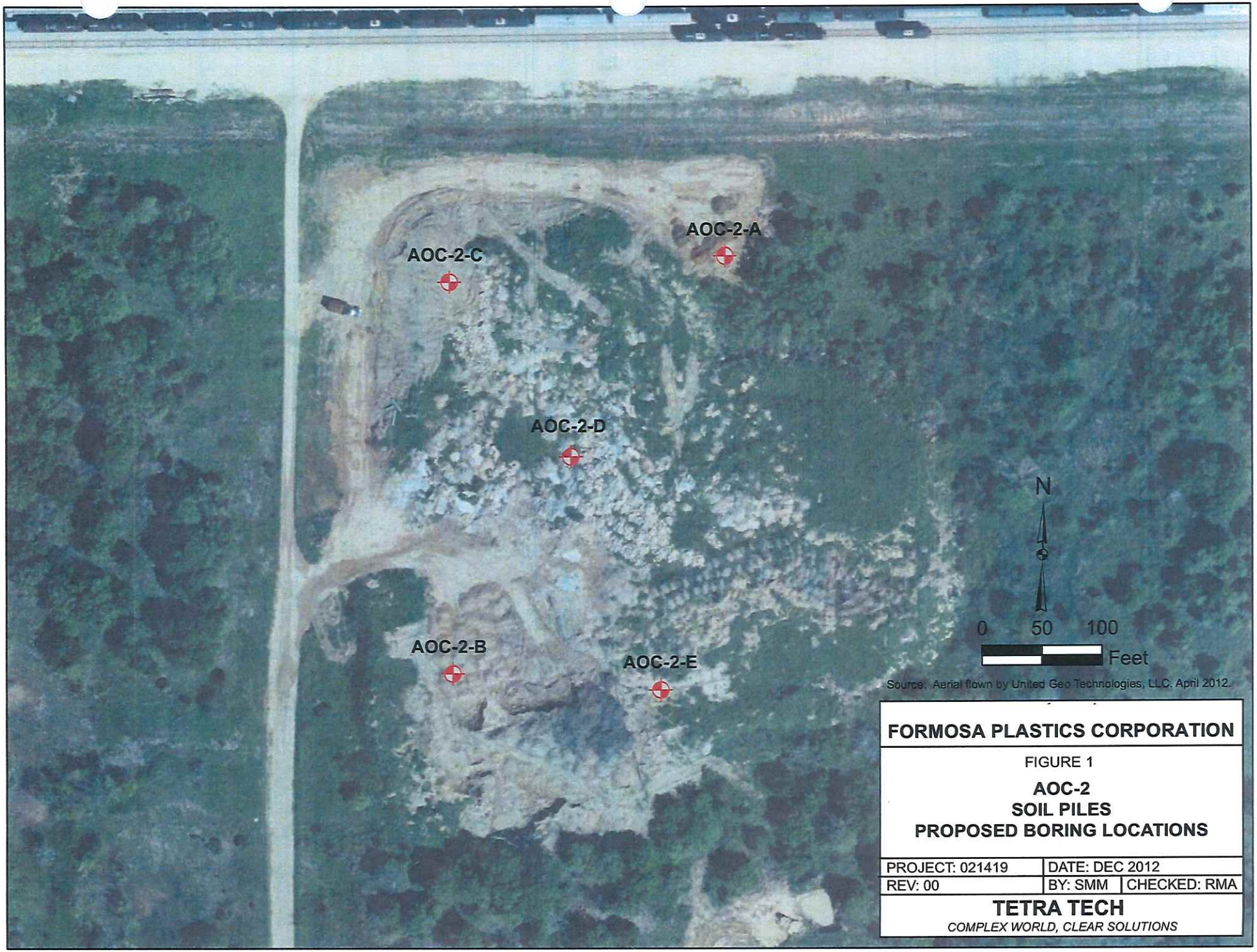
TABLES

Table 1. Soil Sampling Program
AOC-2, 6a, and 8
FPC-TX Expansion Area

SOIL BORINGS AND SOIL SAMPLING

Boring ID	Estimated Depth	Constituents	Soil Sampling Intervals (ft)	Rationale
AOC2-A	16 ft	VOCs, SVOCs, RCRA Metals	0-4, 4-8, 8-12, 12-16	Evaluate stockpiled soil material at AOC-2
AOC2-B	16 ft	VOCs, SVOCs, RCRA Metals	0-4, 4-8, 8-12, 12-16	Evaluate stockpiled soil material at AOC-2
AOC2-C	16 ft	VOCs, SVOCs, RCRA Metals	0-4, 4-8, 8-12, 12-16	Evaluate stockpiled soil material at AOC-2
AOC2-D	16 ft	VOCs, SVOCs, RCRA Metals	0-4, 4-8, 8-12, 12-16	Evaluate stockpiled soil material at AOC-2
AOC2-E	16 ft	VOCs, SVOCs, RCRA Metals	0-4, 4-8, 8-12, 12-16	Evaluate stockpiled soil material at AOC-2
AOC6a-A	4 ft	TPH	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-6a
AOC6a-B	4 ft	TPH	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-6a
AOC6a-C	4 ft	TPH	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-6a
AOC6a-D	4 ft	TPH	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-6a
AOC8-A	4 ft	PAHs	0, 0-2, 2-4	Evaluate vadose zone soil at the AOC-8-Railroad Tie Area
AOC8-B	4 ft	PAHs	0, 0-2, 2-4	Evaluate vadose zone soil at the AOC-8-Railroad Tie Area
AOC8-C	4 ft	PAHs	0, 0-2, 2-4	Evaluate vadose zone soil at the AOC-8-Railroad Tie Area

FIGURES



Source: Aerial flown by United Geo Technologies, LLC. April 2012.

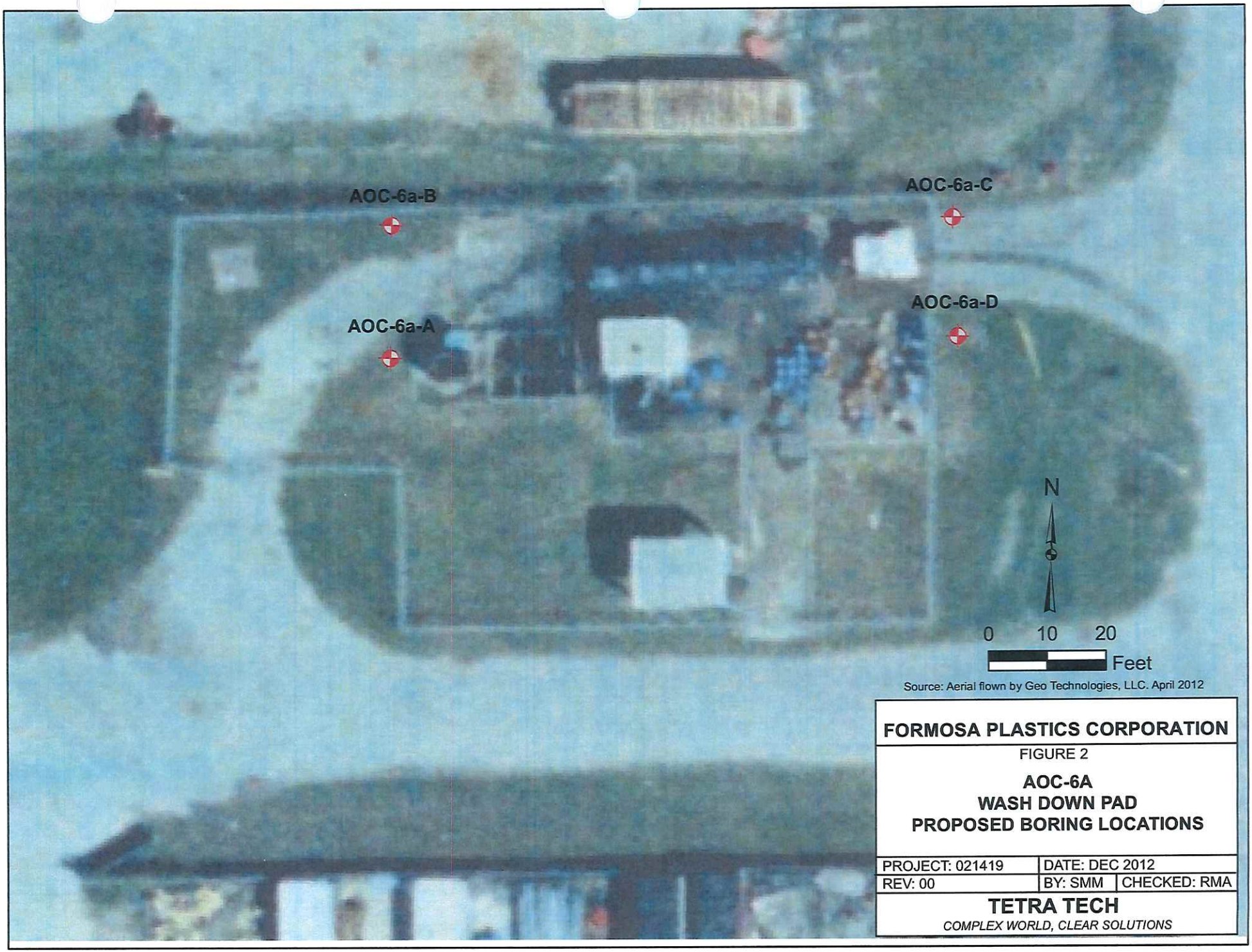
FORMOSA PLASTICS CORPORATION

FIGURE 1

AOC-2
SOIL PILES
PROPOSED BORING LOCATIONS

PROJECT: 021419	DATE: DEC 2012	
REV: 00	BY: SMM	CHECKED: RMA

TETRA TECH
COMPLEX WORLD, CLEAR SOLUTIONS



Source: Aerial flown by Geo Technologies, LLC. April 2012

FORMOSA PLASTICS CORPORATION

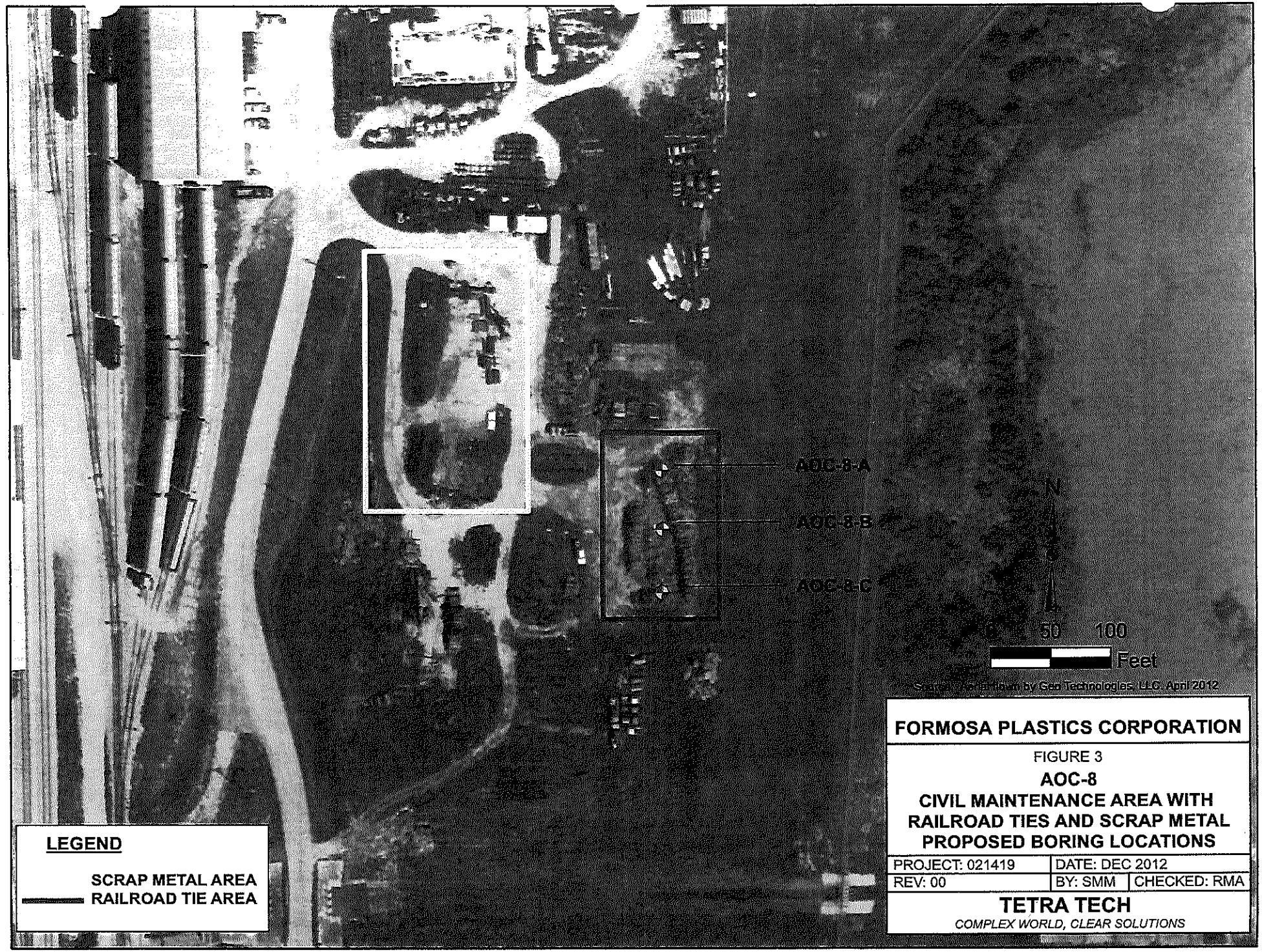
FIGURE 2

AOC-6A
WASH DOWN PAD
PROPOSED BORING LOCATIONS

PROJECT: 021419	DATE: DEC 2012	
REV: 00	BY: SMM	CHECKED: RMA

TETRA TECH

COMPLEX WORLD, CLEAR SOLUTIONS



Source: Aerial flown by Geo Technologies, LLC, April 2012

FORMOSA PLASTICS CORPORATION

FIGURE 3

AOC-8

CIVIL MAINTENANCE AREA WITH RAILROAD TIES AND SCRAP METAL PROPOSED BORING LOCATIONS

PROJECT: 021419	DATE: DEC 2012	
REV: 00	BY: SMM	CHECKED: RMA

TETRA TECH

COMPLEX WORLD, CLEAR SOLUTIONS

Corrective Action Strategy Work Plan
AOCs 2, 6a, and 8
Expansion Area

Prepared for:

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March 8, 2013

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

AOC	Area of Concern
CAFO	Consent Agreement and Final Order
CAS	Corrective Action Strategy
COC	Chemical of Concern
C-O-C	Chain-of-Custody
CSM	Conceptual Site Model
EPA	U.S. Environmental Protection Agency
FPC-TX	Formosa Plastics Corporation, Texas
IDW	Investigative Derived Waste
PAH	Polynuclear Aromatic Hydrocarbon
PCL	Protective Concentration Level
PPE	Personal Protective Equipment
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
SPVC	Specialty Poly-vinyl Chloride
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TCEQ	Texas Commission on Environmental Quality
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbon
TRRP	Texas Risk Reduction Program
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

In accordance with Section VII, Paragraph 32, of the 3008(a) Consent Agreement and Final Order (CAFO), Formosa Plastics Corporation, Texas (FPC-TX) has prepared this work plan to pursue focused investigations to address the Areas of Concern (AOCs) identified by U.S. Environmental Protection Agency (EPA). EPA approved the Scoping Meeting Summary (Tetra Tech, 2012) via letter dated November 13, 2012 (EPA, 2012) and identified three AOCs which require additional investigation:

- AOC-2: Soil Debris Piles Northeast of New Specialty Poly-vinyl Chloride (SPVC) Facility;
- AOC-6a: Wash Down Pad; and
- AOC-8: Civil Maintenance Area with Railroad Ties and Scrap Metal.

This work plan was originally submitted to EPA on January 11, 2013. The current version of the work plan incorporates comments received from EPA via letter dated February 8, 2013 (EPA, 2013), and discussed via conference call with EPA on March 1, 2013.

2.0 SUMMARY OF EXISTING ENVIRONMENTAL DATA

There are no existing soil and groundwater data available for the three AOCs included in this work plan with the exception of a one-time soil sampling event conducted at AOC-2, the Soil Debris Piles Northeast of the New SPVC Facility.

2.1 AOC-2 Soil

On October 3, 2011, FPC-TX collected grab soil samples in order to characterize the AOC-2 soil piles. Six grab samples were collected at depths of six to 12 inches. Samples were analyzed for total petroleum hydrocarbons (TPH) via Method TX 1005 and toxicity characteristic leaching procedure (TCLP) volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), and metals. All analytical results were reported as below detection limits with the exception of four metals:

- Barium – detected in six samples at concentrations ranging from 0.7 to 1.4 mg/l;
- Selenium – detected in four samples at concentrations ranging from 0.011 to 0.02 mg/l;
- Antimony - detected in one sample at a concentration of 0.016 mg/l; and
- Nickel – detected in one sample at a concentration of 0.045 mg/l.

3.0 GENERAL TECHNICAL APPROACH

3.1 General Technical Approach

Paragraph 32, of the CAFO directs FPX-TX to prepare a work plan in accordance with the 2008 Region VI Corrective Action Strategy (CAS) (EPA, 2008) to address data gaps in the conceptual site model (CSM). The CSM as defined by CAS consists of six elements: facility profile, land use and exposure profile, ecological profile, physical profile, release profile, and risk management profile. Appendix A of the CAS includes detailed discussion and guidance regarding the CAS CSM profiles. As described in Section 1 of Appendix A, the first step for the risk manager is to identify known releases, or other potential sources and incorporate all available information into the six profiles. Although EPA has identified three AOCs that require investigation, currently there is no data indicating that a release has occurred or that potential chemicals of concern (COCs) are present in media at any of the three areas of concern, thus the initial step in developing a conceptual site model for each AOC is determining if a release to the environment has occurred. To that end, this work plan will focus on preliminary sampling at each AOC to determine if COCs are present at concentrations greater that applicable Texas Risk Reduction Program (TRRP) protective concentration levels (PCLs). In the event that COCs are detected at concentrations greater than applicable PCLs, a CSM identifying potential COC migration pathways and potential receptors will be developed, data gaps established, and a supplemental work plan developed to more fully characterize the impacted AOCs and address data gaps in the CSM.

3.1.1 AOC-2: Soil Piles

AOC-2, Soil Debris Piles Northeast of New SPVC Facility, is a soil stockpile area associated with facility expansion construction activities. The area consists of multiple discreet piles of soil placed within an approximate 5-acre area. In addition to the discreet soil piles, the area appears to be elevated several feet above the natural grade indicating that much of the area is imported soil fill. There are also concrete piles from foundation construction in piles throughout the area.

Before construction was initiated for the new SPVC facility, the SPVC area was undisturbed open land with no facility operation thus the soil stockpiled in the AOC-2 area is assumed to be clean as supported by the previously completed TCLP testing. Although there is no reason to suspect the presence of impacted soils in AOC-2 originating from SPVC facility construction

activities, in an abundance of caution FPC-TX will pursue a thorough investigation in this area including a wide range of potential COCs to confirm that COCs are not present above PCLs.

FPC-TX plans to advance five borings in the AOC to investigate the nature of the stockpiled soil material (Figure 1). Each boring will be advanced to an adequate depth to allow sampling of both the overlying soil pile and the underlying natural soil.

Based on a review of the general topography of the area and the visual inspection of the area, the soil pile area appears to be built-up approximately 10 to 15 feet above the general elevation in the northern area of the FPC-TX facility. Soil borings will be advanced to a depth of approximately 16 feet below existing grade (the top of the pile area) to ensure that each boring terminates in native material. Soil samples will be collected at the 0 – 2 ft and 2 – 4 ft depth intervals, and on four foot vertical intervals thereafter; a total of five samples per boring. Samples will be analyzed for VOCs, SVOCs, and Resource Conservation and Recovery Act (RCRA) metals.

3.1.2 AOC-6a: Wash Down Pad

AOC-6a, Wash Down Pad, is a concrete area designed with elevated concrete berms intended to contain any residual liquids associated with the wash down and used oil transferring processes. The elevated perimeter berms are slightly lower along the eastern and western sides to allow access for the tanker trucks.

Prior to collecting used oil from various locations throughout within the facility, FPC-TX tests the oil for the presence of chlorine using a HACH kit or similar field test. If any chlorine is detected the facility assumes this is indicative of the possible presence of chlorinated VOCs and the oil is not accepted at the oil/water separator. If chlorine is not detected in the used oil it is collected in tanker trucks and transferred to the oil/water separator via tanker truck. Following adequate separation, oil is removed from the oil/water separator via tanker truck and relocated to the used oil storage tank. Tankers are located on the wash down pad during tanker loading and unloading operations.

The corners of the berm appear to be lowest points along the berm, and thus represent the most likely locations where oily material theoretically could have overflowed the berm into the adjacent grassy areas. During the Initial Scoping Meeting, EPA originally indicated that this

area required only some "housekeeping," as there appeared to be some oil stained soil outside the bermed area to the southeast. As documented in the Post-Scoping Meeting Information Transmittal, FPC-TX removed a thin layer of soil from this area revealing additional concrete.

It appears that any releases from the area would have most likely consisted of oil. In addition, based on the internal data screening process employed by the facility, it appears unlikely that chlorinated VOCs would be present in the area. FPC-TX plans to analyze soil samples from the area for TPH as a screening level indicator compound. If TPH concentrations are detected above applicable TRRP criteria additional evaluation of the area may be warranted.

FPC-TX plans to collect soil samples at four locations generally located near the corners of the bermed area (Figure 2). Four borings will be advanced to a depth of four feet below grade. If releases have occurred in this area, petroleum hydrocarbons would likely be present at the surface or near surface; thus samples will be collected at the natural grade surface and at two foot vertical intervals, for a total of three samples per boring. The samples will be analyzed for TPH via Methods TX 1005 and 1006.

3.1.3 AOC-8: Civil Maintenance Area with Railroad Ties and Scrap Metal

AOC-8, Civil Maintenance Area with Railroad Ties and Scrap Metal, was not included in the initial CAFO Exhibit 1 Solid Waste Management Unit (SWMU) and AOC list. Based on observations made during the Scoping Meeting visual site inspection EPA directed FPC-TX to include the area as an AOC requiring further investigation. AOC-8 includes two separate locations of concern: a temporary railroad tie stockpile area and an area identified by EPA as the scrap metal area.

The location identified by EPA as the "scrap metal area" only contains usable metal parts for rail system maintenance. All of the usable metal parts in this area are associated with the rail system and are designed to be used outside thus do not require special storage or protection to remain usable. Metal parts stored in the area include smaller pieces such as railroad spikes and tie plates, typically stored in 55 gallon drums, although some pieces are simply stockpiled on the ground. Larger metal pieces including rail, railcar wheels, and axles are stockpiled on the ground. None of the material stored in this area is considered solid waste and there is no basis to conduct soil and/or groundwater investigations in this area. Scrap metal is in general placed in dedicated roll-offs and periodically shipped off-site via approved scrap metal handlers.

Much of the area, including the "scrap metal" area discussed above, is currently or historically could have been used to temporarily stockpile railroad ties removed during maintenance. Ties that are in usable condition are offered for reuse. Remaining ties are disposed in an off-site solid waste landfill.

Per EPA's February 8, 2013 comments, "EPA interprets the entire area encompassed by both the metal scrap storage and creosote timber storage as a potential release site." As directed by EPA, FPC-TX plans to advance seven borings in this AOC to investigate potential impacts to soil (Figure 3). Borings will be advanced to a depth of four feet, with samples collected at the ground surface and at two foot intervals, for a total of three samples at each boring location. Soil samples will be analyzed for VOCs, SVOCs, and RCRA metals.

3.2 Summary of General Technical Approach

The following bullets summarize the detailed discussion presented in the previous section. Section 4 provides details regarding specific proposed sampling locations and sample collection and handling procedures.

- AOC-2 Soil Pile
  - Advance five soil borings to a depth of 16 feet
  - Collect soil samples at 0-2 ft, 2-4 ft, 4-8 ft, 8-12 ft, and 12-16 ft at all of boring locations (five samples per boring)
  - Analyze soil samples for VOCs, SVOCs and RCRA metals

- AOC-6a Wash Down Pad
  - Advance four soil borings
  - Collect soil samples on two foot vertical centers including a surface sample (three samples per boring)
  - Analyze soil samples for TPH

- AOC-8 Civil Maintenance Area with Railroad Ties and Scrap Metal
  - Advance seven soil borings
  - Collect soil samples on two foot vertical centers including a surface sample (three samples per boring)
  - Analyze soil samples for VOCs, SVOCs and RCRA metals

4.0 FIELD SAMPLING PLAN

4.1 General Procedures and Requirements

This section identifies sampling methods required to complete the proposed soil investigations summarized in Section 3. Table 1 documents the details of the proposed field activities. Table 2 summarizes the analytical methods and quantitation limits.

4.2 Boring Locations and Estimated Depths

The Field Team Supervisor will field verify the location of each boring and will coordinate with the appropriate FPC-TX personnel to ensure that each location is clear of above and below ground obstructions and approved prior to installing the new borings. Some locations indicated on Figures 1, 2, and 3 may need to be relocated to avoid utilities or obstructions. The Field Team Supervisor will also obtain any specific drilling permits, entry permits, and other applicable permits from the appropriate plant personnel. FPC-TX has a detailed dig permit process that requires sign-off from facility mechanical, electrical, and environmental personnel prior to all subsurface work to ensure that underground utilities are identified and avoided.

4.2.1 AOC-2

Five borings will be advanced within the AOC in order to collect soil samples (Figure 1). Soil samples will be collected at 0-2 ft, 2-4 ft and four foot vertical intervals thereafter to a total depth of 16 feet, approximately one to five feet below natural grade. An attempt will be made during boring installation to distinguish between fill and native material.

4.2.2 AOC-6a

Four borings will be advanced around the AOC (Figure 2). Soil samples will be collected at the surface and at two foot vertical intervals to a total depth of four feet (three samples per boring).

4.2.3 AOC-8

Three soil borings will be advanced within the AOC (Figure 3). Soil samples will be collected at the surface and at two foot vertical intervals to a total depth of four feet (three samples per boring).

4.3 Soil Sampling

Soil borings will be installed using direct push drilling techniques to collect samples while minimizing the generation of investigation derived waste. Borings will be advanced to the depths indicated in Table 1. Soil samples intended for VOC analysis will be collected in accordance with Method 5035. Following collection of the samples intended for VOC analysis, remaining soils from the sampling interval will be placed in a plastic baggie and thoroughly mixed. The mixed soils will then be placed in sample containers appropriate for the selected analysis. Sampling personnel will don new, sterile sampling gloves between each sample interval.

4.4 Sample Identification

Sample labels will be completed with indelible, waterproof ink. Label information includes the sample identification number (sample ID), the date and time of sampling, sample type (e.g., soil), as applicable.

The sample numbering and nomenclature system for soil samples will be as follows:

AOC-#- (Boring)-(Depth Interval)

AOC# = Area of Concern (2, 6a or 8)

Boring = Boring Specific Identifier (A, B…)

Depth Interval = 0-2, 2-4, 4-6, etc… (in feet)

4.5 Sample Handling and Custody Requirements

4.5.1 Sample Handling

Sample handling and custody requirements are intended to maintain control and document possession of environmental samples following sample collection through shipment to the analytical laboratory. Samples will be placed on ice in shipping coolers containing ice immediately following collection. The samples will be securely packed and shipped to the laboratory via an overnight courier service, generally on the day they are collected. If samples are not shipped to the laboratory the same day the samples are collected in the field, additional ice will be placed in the coolers, the coolers will be sealed and kept in a designated secure area until they are shipped to the laboratory.

The sample packaging and shipping procedures summarized below will ensure that the samples arrive at the laboratory with the chain-of-custody (C-O-C) intact:

- The field sampler is personally responsible for the care and custody of the samples until they are transferred to another person or the laboratory. As few people as possible will handle the samples.
- Sample containers will be identified by using sample labels that include the date of collection, unique sample identification number, analyses to be performed and the name or initials of the sample collector.
- Sample labels will be completed for each sample using waterproof ink.
- Samples will be placed in coolers containing ice immediately after collection.
- Samples will be accompanied by a properly completed chain-of-custody form. The sample identification numbers will be listed on the chain-of-custody form. When transferring the possession of samples, the individuals relinquishing and receiving the samples will sign and record the date and time on the form. The chain-of-custody form documents sample custody transfers from the sampler to another person, to the laboratory, or to/from a secure storage area.
- Sample shipments will be accompanied by the chain-of-custody form identifying its contents. The form is completed by the sampling team which, after signing and relinquishing custody to the shipper, the sampling team receives a copy. The shipper, if different than the sampling team members, also receives a copy of the chain-of-custody after relinquishing custody to the laboratory.
- Samples will be properly packaged for shipment and dispatched to the appropriate laboratory for analysis with a separate signed chain-of-custody form enclosed in the shipping cooler. A custody seal will be affixed to the opening of the shipping cooler and cooler will be secured with packing tape for shipment.
- If the samples are sent by common carrier, a bill of lading will be used and copies will be retained as permanent documentation. Commercial carriers are not required to sign the C-O-C form as long as the form is sealed inside the sample cooler and the custody tape remains intact.

4.5.2 Chain of Custody

Proper sample handling and custody procedures ensure the custody and integrity of samples beginning at the time of sampling and continuing through transport, sample receipt, preparation, and analysis.

A sample is in custody if it is in actual physical possession or in a secured area restricted for access only to authorized personnel. The C-O-C form and custody seals are used to document sample handling during transfer from the field to the laboratory and among contractors. The list of items below should be included on the C-O-C form.

- Date and time of collection;
- Site identification;
- Sample matrix;
- Container type;
- Number of containers;
- Preservative used;
- Analyses required;
- Name of collector;
- Custody transfer signatures and dates and time of transfer;
- Name of laboratory admitting the samples; and
- Bill of lading (if applicable).

4.6 Laboratory Analysis

Samples will be shipped to a Texas Commission on Environmental Quality (TCEQ) approved certified lab for analysis. The laboratory will provide a TRRP reporting package. The target reporting limits are TRRP Tier 1 PCLs for soil. Laboratory analytical methods and method quantitation limits are presented in Table 2.

- AOC-2: Soil samples will be analyzed for VOCs via SW-846 8260B, SVOCs via SW-846 8270C, and RCRA Metals via SW-846 6010B.
- AOC 6a: Soil samples will be analyzed for TPH via TX1005 and TX1006.
- AOC 8: Soil samples will be analyzed for VOCs via SW-846 8260B, SVOCs via SW-846 8270C, and RCRA Metals via SW-846 6010B.

4.7 Field Instrument/Equipment Testing, Calibration, Inspection, and Maintenance

Field equipment calibration requirements are contained in the manufacturer's documentation. All calibration will be conducted according to the manufacturer's specifications. Calibration will be conducted daily prior to use and recorded in the daily field log.

4.8 Decontamination Procedures

Site personnel will perform decontamination of equipment when brought on the site, between sample locations, when necessary between sample intervals, and before removing it from the site. Certain disposable equipment meant to be used only once and discarded will be decontaminated prior to use, unless the equipment is packaged, sealed, and accompanied by a certificate of analysis that indicates it has been pre-cleaned and tested.

Non-disposable components of the sampling equipment used to obtain samples that contact the soil will be decontaminated as follows:

- Potable water rinse;
- Phosphate-free detergent wash;
- De-ionized (DI) or distilled water rinse (3 times); and
- Air dry.

4.9 Management of Investigative Derived Wastes

Investigative derived waste (IDW) generated during field activities may include:

- Potentially impacted material including -
  - Limited drill cuttings and soil not used for samples; and
  - Decontamination wash water.
- General Trash including -
  - Personal protective equipment (PPE) including disposable coveralls and gloves;
  - Disposable equipment including plastic ground and equipment covers, aluminum foil, broken or unused sample containers, sample container boxes, tape, etc.; and,
  - Packing and shipping materials.

Potentially impacted IDW will be accumulated in 55-gallon drums or other appropriate containers and stored in a designated IDW storage area. These wastes will be characterized based on the analytical results from the sampling event and disposed of in accordance with applicable regulations. General trash will be gathered in heavy duty garbage bags and disposed in a plant designated solid waste disposal container.

4.10 Field Records and Boring Logs

Field data will be recorded on standard forms. Field data primarily will be direct observations, hand measurements, and/or direct-readings from field meters. These data will be tabulated and included in project reports or submittals, as appropriate.

Soil boring logs will be documented for all borings. Borings will be continuously sampled and logged for the entire depth of the boring. The lithologic description of the log will include soil type, color, grain size, texture, hardness, degree of induration, calcareous content, indications of contamination, and other pertinent information. Color will be described using the Munsell Color Chart. Soil type will be described using the Unified Soil Classification System (ASTM D 2488-00).

4.11 Surveying

All sample locations will be accurately depicted on a drawing, topographic or other standard map, or be referenced in such a manner that the location(s) can be firmly established. Each field measurement made should be traceable to the person(s) making the measurement. Soil borings will be recorded with a Trimble handheld XH-sub-meter GPS unit (or equivalent).

4.12 Soil Boring P&A Procedures

After completion of sampling activities at each boring, the boring will be abandoned by filling the hole. Borings will be plugged and abandoned in accordance with Texas Water Well Drillers Board Guidelines.

4.13 Quality Assurance

Quality control (QC) samples will include field duplicates, equipment blanks/rinse blanks, trip blanks, and MS/MSDs. The following table presents the QC samples and corresponding frequency of collection.

QC Samples and Corresponding Frequency of Collection

QC Sample	Frequency	Comment
Field Duplicate	At least one field duplicate sample will be collected for each matrix per AOC. A duplicate sample will be collected every 10 samples (10% frequency).	Field duplicate samples will be collected at the same location as the original sample. Field duplicate locations will be determined prior to field sampling and will be assigned an identification number that will not be identifiable as a duplicate (blind duplicate) by the laboratory.
Trip Blank	One per each cooler containing VOCs.	Trip blank consists of a VOA sample vial filled in the laboratory with ASTM Type II reagent grade water transported with sample containers and returned to laboratory for analysis of VOCs.
MS/MSDs	One MS/MSD will be collected for every 20 samples for each matrix at each AOC.	MS/MSDs will be collected in the same manner as the original sample and designated on the chain-of-custody (C-O-C).
Temperature Measurement	One temperature measurement per sample cooler.	Appropriate temperature measuring methods include measurement of the temperature of a temperature blank contained in the cooler. Infrared temperature measurement of an aqueous sample is also acceptable.

5.0 REPORTING

Upon completion of the field activities and receipt and validation of all analytical data, a report summarizing the sampling results will be prepared. The memorandum will summarize data collection methodology, deviations from the Work Plan, if any, and present the analytical and data validation results. Analytical results will be compared to TRRP Tier 1 PCLs. The report will also recommend if additional data is required.

6.0 REFERENCES

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U.S.EPA, 2012. U.S. Environmental Protection Agency, *Approval of the Scoping Meeting Summary for the Consent Agreement and Final Order (CAFO) U.S. EPA Docket No. RCRA-06-2012-0938; from Nancy Fagan, EPA, to R.P. Smith, Formosa Plastics Corporation – Texas.* November 13.

U.S.EPA, 2013. U.S. Environmental Protection Agency, *EPA and TCEQ Comments on the CAS Work Plan submitted for the Consent Agreement and Final Order (CAFO) U.S. EPA Docket No. RCRA-06-2012-0938; from Nancy Fagan, EPA, to R.P. Smith and Matt Brogger, Formosa Plastics Corporation – Texas.* February 8.

TABLES

Table 1. Soil Sampling Program
AOC-2, 6a, and 8
FPC-TX Expansion Area

	Boring ID	Estimated Depth	Constituents	Soil Sampling Intervals (ft)	Rationale
AOC-2	AOC2-A	16 ft	VOCs, SVOCs, RCRA Metals	0-2, 2-4, 4-8, 8-12, 12-16	Evaluate stockpiled soil material at AOC-2
	AOC2-B	16 ft	VOCs, SVOCs, RCRA Metals	0-2, 2-4, 4-8, 8-12, 12-16	Evaluate stockpiled soil material at AOC-2
	AOC2-C	16 ft	VOCs, SVOCs, RCRA Metals	0-2, 2-4, 4-8, 8-12, 12-16	Evaluate stockpiled soil material at AOC-2
	AOC2-D	16 ft	VOCs, SVOCs, RCRA Metals	0-2, 2-4, 4-8, 8-12, 12-16	Evaluate stockpiled soil material at AOC-2
	AOC2-E	16 ft	VOCs, SVOCs, RCRA Metals	0-2, 2-4, 4-8, 8-12, 12-16	Evaluate stockpiled soil material at AOC-2
AOC-6a	AOC6a-A	4 ft	TPH	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-6a near the corners of the pad
	AOC6a-B	4 ft	TPH	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-6a near the corners of the pad
	AOC6a-C	4 ft	TPH	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-6a near the corners of the pad
	AOC6a-D	4 ft	TPH	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-6a near the corners of the pad
AOC-8	AOC8-A	4 ft	VOCs, SVOCs, RCRA Metals	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-8
	AOC8-B	4 ft	VOCs, SVOCs, RCRA Metals	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-8
	AOC8-C	4 ft	VOCs, SVOCs, RCRA Metals	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-8
	AOC8-D	4 ft	VOCs, SVOCs, RCRA Metals	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-8
	AOC8-E	4 ft	VOCs, SVOCs, RCRA Metals	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-8
	AOC8-F	4 ft	VOCs, SVOCs, RCRA Metals	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-8
	AOC8-G	4 ft	VOCs, SVOCs, RCRA Metals	0, 0-2, 2-4	Evaluate vadose zone soil at AOC-8

Table 2. Analysis Methodology and Quantitation Limits
AOC 2, 6a, and 8 Soil Sampling Program
FPC-TX Expansion Area

Parameter	Method	MQL
Volatile Organic Compounds (VOCs)		***(µg/Kg)***
1,1,1-Trichloroethane	EPA 8260	5
1,1,2,2-Tetrachloroethane	EPA 8260	5
1,1,2-Trichlor-1,2,2-trifluoroethane	EPA 8260	5
1,1,2-Trichloroethane	EPA 8260	5
1,1-Dichloroethane	EPA 8260	5
1,1-Dichloroethene	EPA 8260	5
1,2,4-Trichlorobenzene	EPA 8260	5
1,2-Dibromo-3-chloropropane	EPA 8260	5
1,2-Dibromoethane	EPA 8260	5
1,2-Dichlorobenzene	EPA 8260	5
1,2-Dichloroethane	EPA 8260	5
1,2-Dichloropropane	EPA 8260	5
1,3-Dichlorobenzene	EPA 8260	5
1,4-Dichlorobenzene	EPA 8260	5
2-Butanone	EPA 8260	10
2-Hexanone	EPA 8260	10
4-Methyl-2-pentanone	EPA 8260	10
Acetone	EPA 8260	20
Benzene	EPA 8260	5
Bromodichloromethane	EPA 8260	5
Bromoform	EPA 8260	5
Bromomethane	EPA 8260	10
Carbon disulfide	EPA 8260	10
Carbon tetrachloride	EPA 8260	5
Chlorobenzene	EPA 8260	5
Chloroethane	EPA 8260	10
Chloroform	EPA 8260	5
Chloromethane	EPA 8260	10
cis-1,2-Dichloroethene	EPA 8260	5
cis-1,3-Dichloropropene	EPA 8260	5
Cyclohexane	EPA 8260	5
Dibromochloromethane	EPA 8260	5
Dichlorodifluoromethane	EPA 8260	5
Dichloromethane	EPA 8260	10
Ethylbenzene	EPA 8260	5
Isopropylbenzene	EPA 8260	5
m,p-Xylene	EPA 8260	10
Methyl acetate	EPA 8260	5
Methyl tert-butyl ether	EPA 8260	5
Methylcyclohexane	EPA 8260	5
o-Xylene	EPA 8260	5
Styrene	EPA 8260	5
Tetrachloroethene	EPA 8260	5
Toluene	EPA 8260	5
trans-1,2-Dichloroethene	EPA 8260	5
trans-1,3-Dichloropropene	EPA 8260	5
Trichloroethene	EPA 8260	5
Trichlorofluoromethane	EPA 8260	5

Table 2. Analysis Methodology and Quantitation Limits
AOC 2, 6a, and 8 Soil Sampling Program
FPC-TX Expansion Area

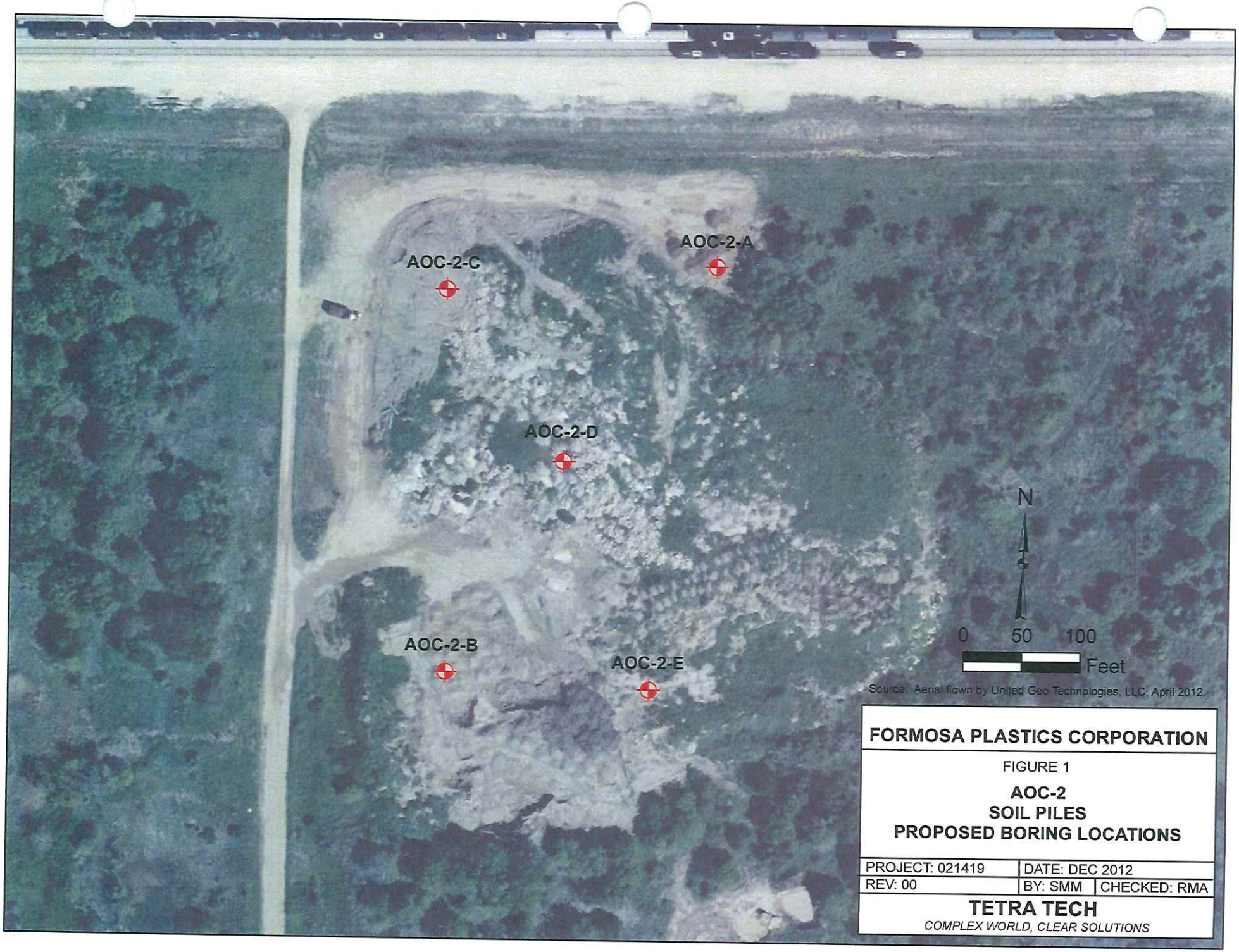
Vinyl chloride	EPA 8260	2
Xylenes, Total	EPA 8260	15
Semi-volatile Organic Compounds (SVOCs)		***(µg/Kg)***
1,1´-Biphenyl	EPA 8270	167
2,4,5-Trichlorophenol	EPA 8270	167
2,4,6-Trichlorophenol	EPA 8270	167
2,4-Dichlorophenol	EPA 8270	167
2,4-Dimethylphenol	EPA 8270	167
2,4-Dinitrophenol	EPA 8270	167
2,4-Dinitrotoluene	EPA 8270	167
2,6-Dinitrotoluene	EPA 8270	167
2-Chloronaphthalene	EPA 8270	167
2-Chlorophenol	EPA 8270	167
2-Methylnaphthalene	EPA 8270	167
2-Methylphenol	EPA 8270	167
2-Nitroaniline	EPA 8270	167
2-Nitrophenol	EPA 8270	167
3&4-Methylphenol	EPA 8270	167
3,3´-Dichlorobenzidine	EPA 8270	167
3-Nitroaniline	EPA 8270	167
4,6-Dinitro-2-methylphenol	EPA 8270	167
4-Bromophenyl phenyl ether	EPA 8270	167
4-Chloro-3-methylphenol	EPA 8270	167
4-Chloroaniline	EPA 8270	167
4-Chlorophenyl phenyl ether	EPA 8270	167
4-Nitroaniline	EPA 8270	167
4-Nitrophenol	EPA 8270	167
Acenaphthene	EPA 8270	167
Acenaphthylene	EPA 8270	167
Acetophenone	EPA 8270	167
Anthracene	EPA 8270	167
Atrazine	EPA 8270	167
Benz(a)anthracene	EPA 8270	167
Benzaldehyde	EPA 8270	167
Benzo(a)pyrene	EPA 8270	167
Benzo(b)fluoranthene	EPA 8270	167
Benzo(g,h,i)perylene	EPA 8270	167
Benzo(k)fluoranthene	EPA 8270	167
Bis(2-chloroethoxy)methane	EPA 8270	167
Bis(2-chloroethyl)ether	EPA 8270	167
Bis(2-chloroisopropyl)ether	EPA 8270	167
Bis(2-ethylhexyl)phthalate	EPA 8270	167
Butyl benzyl phthalate	EPA 8270	167
Caprolactam	EPA 8270	167
Carbazole	EPA 8270	167
Chrysene	EPA 8270	167
Dibenz(a,h)anthracene	EPA 8270	167
Dibenzofuran	EPA 8270	167
Diethyl phthalate	EPA 8270	167
Dimethyl phthalate	EPA 8270	167
Di-n-butyl phthalate	EPA 8270	167

Table 2. Analysis Methodology and Quantitation Limits
AOC 2, 6a, and 8 Soil Sampling Program
FPC-TX Expansion Area

Di-n-octyl phthalate	EPA 8270	167
Fluoranthene	EPA 8270	167
Fluorene	EPA 8270	167
Hexachlorobenzene	EPA 8270	167
Hexachlorobutadiene	EPA 8270	167
Hexachlorocyclopentadiene	EPA 8270	167
Hexachloroethane	EPA 8270	167
Indeno(1,2,3-cd)pyrene	EPA 8270	167
Isophorone	EPA 8270	167
Naphthalene	EPA 8270	167
Nitrobenzene	EPA 8270	167
N-Nitrosodi-n-propylamine	EPA 8270	167
N-Nitrosodiphenylamine	EPA 8270	167
Pentachlorophenol	EPA 8270	167
Phenanthrene	EPA 8270	167
Phenol	EPA 8270	167
Pyrene	EPA 8270	167
Total Petroleum Hydrocarbons (TPH)		***(mg/Kg)***
TPH, TX1005, >C12-C28	Texas 1005	50
TPH, TX1005, >C28-C35	Texas 1005	50
TPH, TX1005, C6-C12	Texas 1005	50
TPH, TX1005, >C12-C35	Texas 1005	50
Total Petroleum Hydrocarbon	Texas 1005	50
Aliphatics nC6	Texas 1006	10
Aliphatics >nC10 to nC12	Texas 1006	10
Aliphatics >nC12 to nC16	Texas 1006	10
Aliphatics >nC16 to nC21	Texas 1006	10
Aliphatics >nC21 to nC35	Texas 1006	10
Aliphatics >nC6 to nC8	Texas 1006	10
Aliphatics >nC8 to nC10	Texas 1006	10
Aliphatics Relative % Distribution	Texas 1006	0
Aromatics >nC10 to nC12	Texas 1006	10
Aromatics >nC12 to nC16	Texas 1006	10
Aromatics >nC16 to nC21	Texas 1006	10
Aromatics >nC21 to nC35	Texas 1006	10
Aromatics >nC7 to nC8	Texas 1006	10
Aromatics >nC8 to nC10	Texas 1006	10
Aromatics Relative % Distribution	Texas 1006	0
Total Petroleum Hydrocarbons	Texas 1006	50
RCRA 8 Metals		***(mg/Kg)***
Arsenic	ICP/EPA 6020	0.5
Barium	ICP/EPA 6020	0.5
Cadmium	ICP/EPA 6020	0.5
Chromium	ICP/EPA 6020	0.5
Lead	ICP/EPA 6020	0.5
Selenium	ICP/EPA 6020	0.5
Silver	ICP/EPA 6020	0.5
Mercury	ICP/EPA 7470	3.325

Note: MQLs provided by ALS, and may vary depending on the actual lab chosen to complete the work.

FIGURES



Source: Aerial flown by United Geo Technologies, LLC. April 2012.

FORMOSA PLASTICS CORPORATION

FIGURE 1

AOC-2
SOIL PILES
PROPOSED BORING LOCATIONS

PROJECT: 021419	DATE: DEC 2012	
REV: 00	BY: SMM	CHECKED: RMA

TETRA TECH
COMPLEX WORLD, CLEAR SOLUTIONS

Source: Aerial flown by Geo Technologies, LLC. April 2012

FORMOSA PLASTICS CORPORATION

FIGURE 2

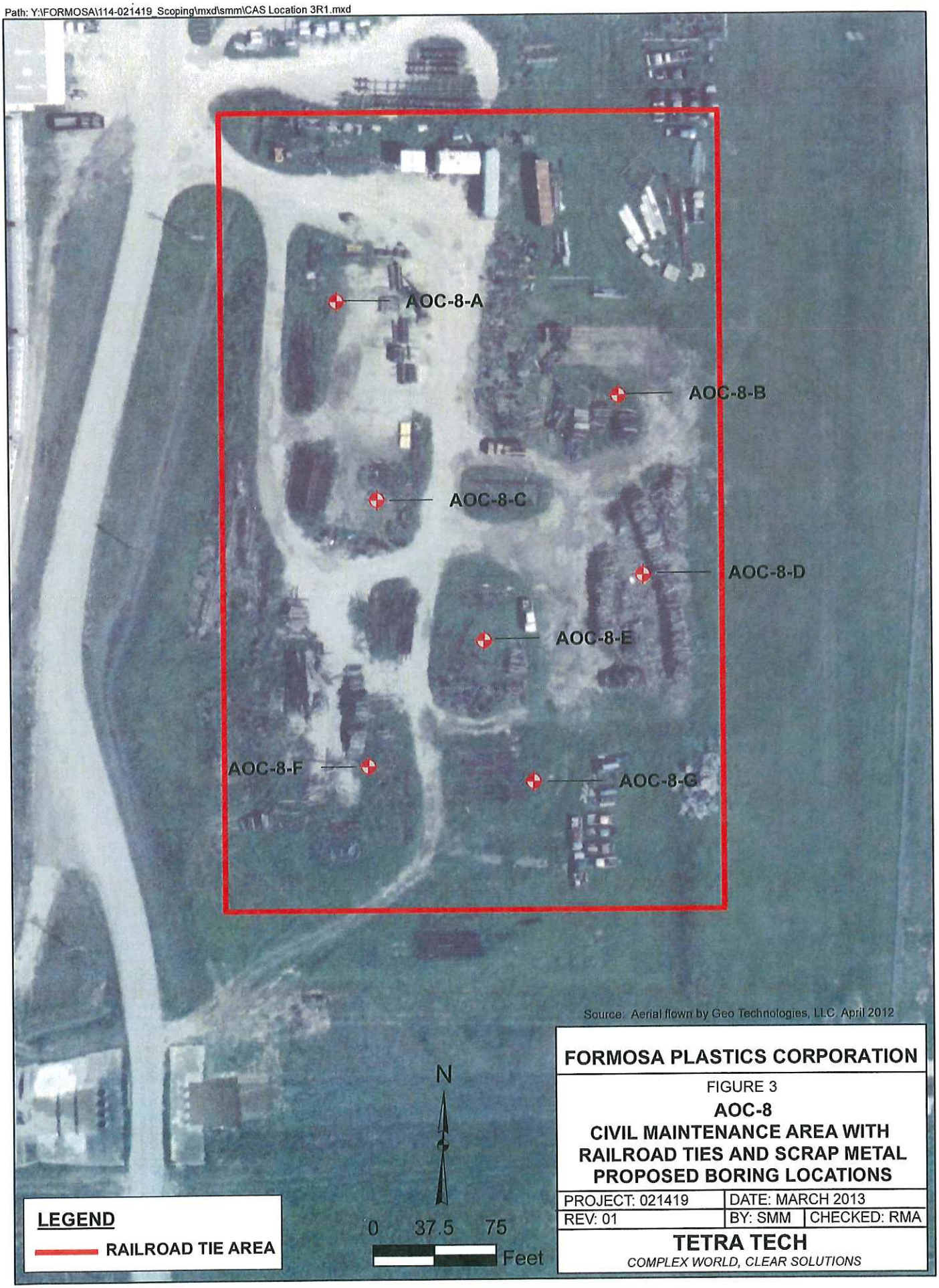
AOC-6A
WASH DOWN PAD
PROPOSED BORING LOCATIONS

PROJECT: 021419	DATE: DEC 2012	
REV: 00	BY: SMM	CHECKED: RMA

TETRA TECH

COMPLEX WORLD, CLEAR SOLUTIONS

Path: Y:\FORMOSA\114-021419_Scoping\mxd\smm\CAS Location 3R1.mxd



Source: Aerial flown by Geo Technologies, LLC. April 2012

FORMOSA PLASTICS CORPORATION

FIGURE 3

AOC-8
CIVIL MAINTENANCE AREA WITH RAILROAD TIES AND SCRAP METAL PROPOSED BORING LOCATIONS

PROJECT: 021419	DATE: MARCH 2013	
REV: 01	BY: SMM	CHECKED: RMA

TETRA TECH
COMPLEX WORLD, CLEAR SOLUTIONS

Formosa Plastics®

Formosa Plastics Corporation, Texas
201 Formosa Drive • P.O. Box 700
Point Comfort, TX 77978
Telephone: 361-987-7000

March 25, 2014

Via e-mail and Certified Mail:
7012 3460 0001 7691 1110

Ms. Nancy Fagan
Project Coordinator
6PD-O
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

RE: Corrective Measures Implementation Progress Report
RCRA Docket No. VI-001(h)-90-H
Section 3008(h) Administrative Order on Consent, as Amended
EPA I.D. No. TXT490011293
Solid Waste Registration No. 31945

Dear Ms. Fagan:

As per Section V, Task XIV, of the Corrective Action Plan that was amended by Amendment No. 2 (effective on June 12, 2012) to the RCRA Section 3008(h) Order issued in 1991, FPC-TX is submitting its bi-monthly progress report for Corrective Measure Implementation (CMI) under the terms of the amended Order. We are continuing to use a progress report format that we have used for recent years for reports submitted under the Corrective Action Plan that was issued as Exhibit 1 to the 1991 Order. This report covers the time period between the date of the last progress report (January 22, 2014) and today's date. We understand that EPA wishes us to maintain the prior schedule and due dates under the amended Order, which would mean that these progress reports are due on the 25th of every other month.

Meetings and Conference Calls:

22 Jan

- A conference call with EPA, TCEQ, Tetra Tech and FPC-TX was held to discuss EPA and TCEQ comments to the October 31, 2013 Draft Performance Monitoring Plan.

20 Feb

- A meeting was held in Austin between EPA, TCEQ, Tetra Tech and FPC-TX to discuss the draft Performance Monitoring Plan.

CMI Activities at FPC-TX in June and July 2013:

- The pilot scale treatability study began in February. To date the dual phase extraction (DPE) test is complete. The first injection for the In-Situ Chemical Oxidation (ISCO) test has been completed.

Planned CMI activities for the next reporting period:

- Submit the revised Draft Performance Monitoring Plan.
- Continue the ISCO pilot scale testing.

If you have any questions about this report please contact Matt Brogger at (361) 987-7468 or by e-mail at mattb@ftpc.fpcusa.com.

Sincerely,

R.P. Smith
Vice President/General Manager
Formosa Plastics Corporation, Texas

cc: Ms. Susan Clewis — Certified Mail: 7012 3460 0001 7691 1127
TCEQ, Region 14
6300 Ocean Drive, Suite 1200
Corpus Christi, TX 78412

Ms. Karen F. Scott, P.G. — Certified Mail: 7012 3460 0001 7691 1134
TCEQ
I&HW Permits Section
P.O. Box 13087
Austin, TX 78711-3087

Ms. Merrilee Hupp, (MC-169) — Certified Mail: 7012 3460 0001 7691 1141
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

TXT490011293 TE

HEALTH AND SAFETY PLAN

General Information

Location: Point Comfort, Texas
Activities: RCRA/Corrective Action Scoping Meeting (incl. focused inspection)
Dates: Monday through Thursday, August 20-23, 2012
Personnel: Frances Verhalen, Nancy Fagan

Emergency Information

Emergency Phone: 911
Procedures: Exit the Facility and assess the situation
Medical Facilities: DeTar Hospital, 506 E. San Antonio, Victoria, TX, (318) 575-7441
Directions to Local Medical Facilities: See Attached map with Directions.
Check Potential Hazards: Reference RCRA Corrective Action Facility Inspection JHA

X Radiation	X Toxics	X Fire/Explosion	X Corrosives
___ O_2 Deficiency	X Noise	X Physical	X Biological
___ Dusts	X Heat/Cold Stress	___ Other: ___	

Hazard Description: Toxic chemical processes, slip/trip/fall, biological, heat stress, solar radiation and vehicular traffic. Review of waste management procedures and inspection of process and waste storage areas. Personnel will be accompanied by facility staff at all times.

Prevention: *All site safety procedures shall be followed. Areas with potential exposure to chemical, physical and biological hazards shall be avoided if at all possible. Team members shall not enter confined spaces. In case of emergency, all inspection staff shall exit and allow facility representatives to contain and manage incident.*

Safety Supplies: Reference RCRA Corrective Action Facility Inspection JHA

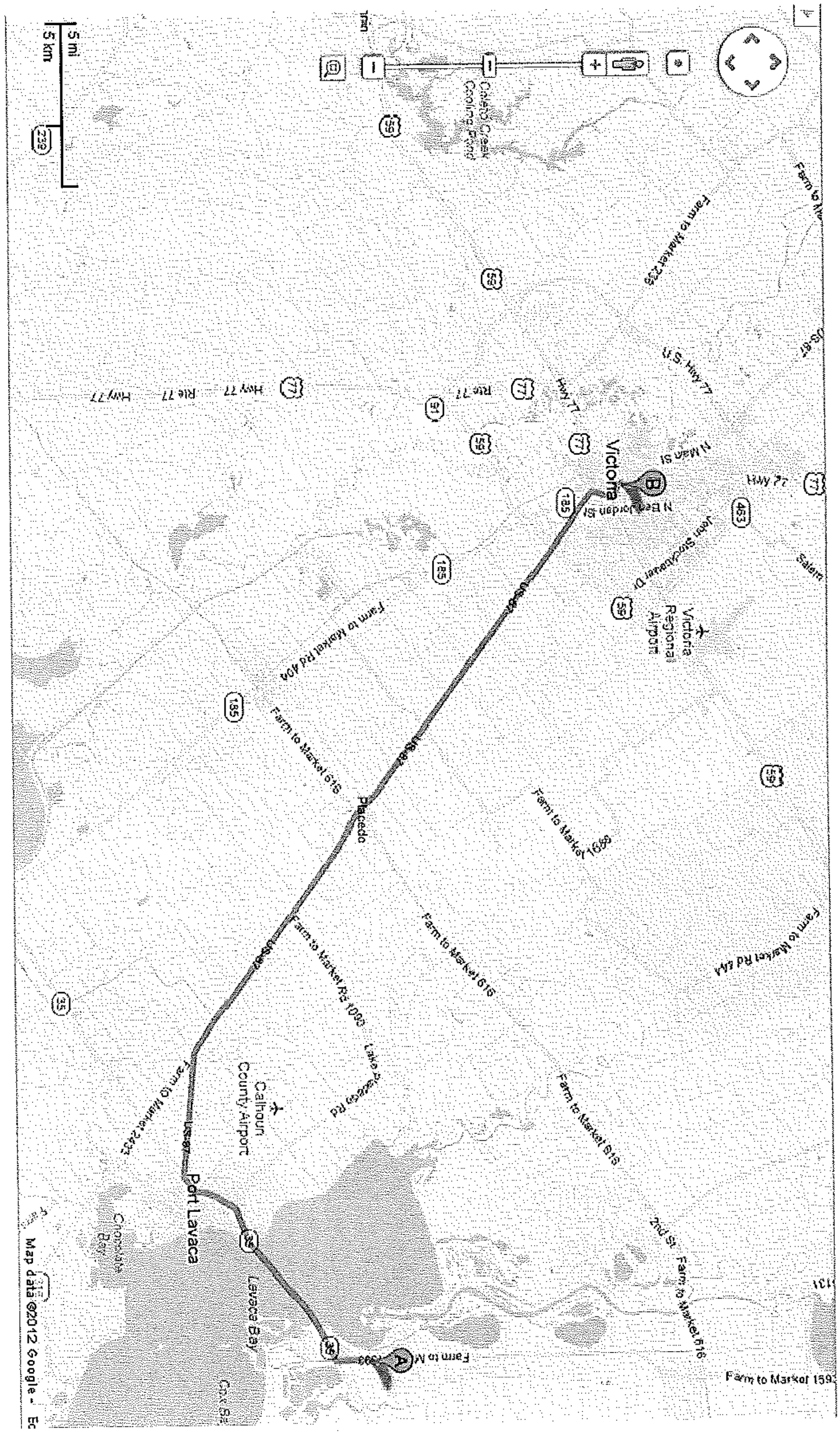
This site HASP has been reviewed and constitutes the minimum anticipated safety requirements for personnel engaged in field activities at this project site. However, the Project Leader has the authority to change these requirements, based upon the conditions present at the site.

Approved by:

Project Leader: Frances Verhalen
Phone Number: (214) 665-2172 Date: August 14, 2012

Section Chief: Troy Stuckey
Phone Number: (214) 665-4462 Date: 8-17-12

Health and Safety Officer: Kendra Gomez
Phone Number: (214) 665-7225 or (214) 205-7643 Date: 8/15/12


Victoria
Port Lavaca
Placedo
Lavaca Bay
Chocolate Bay
Calhoun County Airport
Victoria Regional Airport
Coleto Creek Cooling Pond
Farm to Market Rd 404
Farm to Market 616
Farm to Market Rd 1090
Farm to Market 2433
Farm to Market 1686
Farm to Market Rd 444
Farm to Market 236
N Ben Jordan St
John Stockbauer Dr
N Main St
U.S. Hwy 77
Hwy 77
Rte 77
US-87
Map data ©2012 Google
5 mi
5 km

A **Point**

Comfort, TX

Depart FM-1593 / County Rd toward TX-35 W

0.4 mi

Turn right onto TX-35 W

Pass Motel 6 in 4.4 mi

7.6 mi

Bear right onto US-87

2.5 mi

Bear right onto US-87 N

20.3 mi

Bear right onto US-87

Turn right onto TX-185 / N Laurent St

Exxon on the corner

0.7 mi

Turn left onto US-59 Branch / E Rio Grande St

Wienerschnitzel on the corner

0.4 mi

Turn right onto N Cameron St

KIA on the corner

0.1 mi

Turn right onto E San Antonio St

132 ft

Arrive at 506 E San Antonio St, Victoria, TX 77901

The last intersection is N Cameron St

If you reach N East St, you've gone too far

B **506 E San Antonio St, Victoria, TX 77901**

JOB HAZARD ANALYSIS

Job Task: **RCRA Corrective Action Facility Inspection**

Hazard Types (HT)

1. Toxic Chemic
2. Flammable Chemicals
3. Corrosive Chemicals
4. Environmental
5. Explosion (Chemical Reaction)
6. Explosion (Over pressurization)
7. Mechanical/Vibration
8. Electrical (Shock, Short Circuit)
9. Electrical (Fire)
10. Electrical (Static, ESD)
11. Electrical (Loss of Power)
12. Ergonomic (Overexertion)
13. Ergonomic (Human Error)
14. Vibration
15. Fall (Slips/Trips)
16 Fall (To a Different Level)
17. Excavation (Collapse)
18. Fire, Heat, Thermal, Cold
19. Noise
20. Radiation
21. Visibility
22. Weather
23. Caught (In, On, Between)
24. Struck (By, Against)
25. Driving
26. Confined Space
27. Other

Job Frequency/Duration:
1-6 year per inspector;
1 – 5 days/site; may conduct several site inspections during one trip

Tools Used:
Digital Camera
PIDs/FIDs
4 Gas Meters
Sampling containers/bottles
Coliwasa sampler
Bailers –GW Sampling
Low flow pumps – GW Sampling
Soil scoops
Hand Auger/Slam Bar

Chemicals Used:
Hydrochloric Acid (rarely)
Nitric Acid
Sulfuric Acid
Methanol
Liquidnox/Alconox

CRITICAL TO SAFETY (CTS)

Risk Estimation Matrix

Probability of Occurrence of Harm	SEVERITY OF HARM			
	Catastrophic	Serious	Moderate	Minor
VERY LIKELY	Extreme	[redacted]	[redacted]	Medium
LIKELY	[redacted]	[redacted]	Medium	Low
UNLIKELY	Medium	Medium	Low	Negligible
REMOTE	Low	Low	Negligible	Negligible

* High = CTS tasks should receive engineering controls prior to assigning administrative or PPE controls.

Job Description: Personnel conduct RCRA corrective action inspections at industrial facilities to determine regulatory compliance and risk to human health and the environment by potential affected media. Personnel visit TSDFs and generators (SQG, LQG, and conditional exempt). The quantity of hazardous waste on-site can range from a few drums to several million gallons. Types of facilities visited included chemical, petrochemical, petroleum refineries, mineral/mining facilities, federal facilities, electrolytic platters, etc.

Step #	Procedures (LOP Procedure Step)	Potential Hazards	HT	Check CTS	Recommended Safe Practice	PPE
1	Conduct file review; Communicate with State counterpart; develop site-specific Health & Safety Plan and inspection strategy/plan	None	NA	NA	NA	NA
2	Orgainze personnel/equipment/supplies; Deploy to location either by car or airplane (personnel drive if travel time is less than 5hr; if travel time is between 5-7 hours, personnel may consider driving)	Ergonomics, Driving, Weather	13, 21, 22, 24, 25	Medium	Careful lifting techniques, secure grip, packing at desk level or higher, secure equipment within vehicle; Drive defensivly; do not text while driving; use hands-free telephonic device	None
3	Site Entry: Personnel conduct a tailgate meeting either the night before or the morning of the inspection to discuss the inspection stratgey/H&S issues amongst themselves or with State. Prior to entry, personnel may drive the site permineter to obtain their situational awareness (i.e. site layout, safety issues, surface waters, vapors or visible emissions, shimmers that indicate heat sourcers, etc). Personnel present credentials and conduct opening meeting with site personnel. At this time, personnel are given the facility's safety brief and site-specific PPE may be issued. Personnel conduct an administrative review of facility records and a facility walk-through, which is accomplished on foot or vehicle, depending upon size of facility. Personnel focus on remedial actions and processes conducted by the facility. Personnel may conduct environmental sampling (i.e. contaminated soil, groundwater, surface water, etc.)	Chemicals, thermal/cold stress, fire, explosion, noise, slips/trips/falls, biological, electricity, radiation	1-8, 12, 15, 16, 18-20, 22-24, 26, 27	[redacted]	Reference table below and PPE Hazard Assessment Form	

Step #	Procedures (LOP Procedure Step)	Potential Hazards	HT	Check CTS	Recommended Safe Practice	PPE
4	At the conclusion of the inspection, personnel conduct an exit meeting with facility personnel to discuss discrepancies.	None	NA	NA	NA	NA
5	If sampling activites occurred, personnel prepare samples for shipment (labels, packaging, etc). Manifests and shipping paperwork are prepared and samples sent for analysis.	Chemicals, thermal/cold	1-4, 18	Medium		
6	Decontaminate and/or dispose of PPE and equipment utilized during the inspection.	Chemicals, thermal/cold	1-4, 18	Medium		
7	If applicable, personnel drive to next facility and repeat steps 3 – 6 above. If not, personnel proceed to step 8 below.	Reference Steps 3 - 6				
8	At completion of visit, return to Regional Office and proceed with post inspection procedures (administrative in nature).	Ergonomics, Driving, Weather	13, 21, 22, 24, 25	Medium	Careful lifting techniques, secure grip, packing at desk level or higher, secure equipment within vehicle; Drive defensivly; do not text while driving; use hands-free telephonic device	None

HAZARDS—NOTE ALL POTENTIAL HAZARDS ASSOCIATED WITH THE JOB (CHECK ALL THAT APPLY)

Physical								
General	☒	thermal stress	☒	cold	☒	noise		
	☒	explosion	☒	fire	☒	weather		
	☒	fatigue	☐	violence	☒	illness/injury		
Radiation	☒	ionizing	☐	microwave	☐	light		
Vehicles	☒	traffic	☒	heavy equip	☒	forklift		
	☐	helicopter	☐	small aircraft	☐	boat		
Boat Ops	☐	sediment sampling	☐	rapid water	☐	open water		
	☐	diving	☐	electrofish				
Industrial	☒	comp gas	☒	electricity	☐	confined space		
	☒	equip	☒	moving parts				
Overhead	☒	obstruction	☒	falling objects				
Elevation	☒	roof	☐	scaffold	☒	ladder		
	☒	stairs	☒	catwalk				
Slips/trips	☒	terrain	☒	debris	☒	slippery		
	☒	trench	☒	pits/holes				
Other physical hazards:			☐					

Biological							
Agriculture	☐	CAFO	☐	fish	☐	farm animals	
Animals	☒	dogs	☒	feral animals	☒	snakes	
Insects	☒	spiders	☒	mosquitoes	☒	wasp/hornet	
	☒	bees					
Pathogens	☐	bloodborne	☐	sewage	☐	med/lab	
Other Biological:	☒	poisonous plants, ticks, scorpions,					

Chemical							
Containers	☒	ammonia	☒	chlorine	☒	other	
VOCs	☒	solvents	☒	fuel	☒	oils	
Wastes	☐	sewer	☒	landfill	☒	smoke/dust/fume	
	☒	metals	☒	PCBs	☒	paints/surfacing	
Particulates	☒	fibers	☒	diesel	☒	asbestos	
Sampling	☒	acids	☒	bases			
Other Chemicals:	☒	Radioisotopes; chemical laboratories associated with site					

PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIRED (CHECK ALL THAT APPLY)

Feet:	☐	safety boots	☒	steel-toe boots	☐	shank	
	☒	rubber boots/booties	☐	waders	☒	Other: Site-Specific	
Gloves:	☒	leather	☐	cotton	☐	cut-resistant	
	☒	chemical resist	☒	disposable			
Body:	☒	safety vest	☐	pfd	☐	harness	
	☒	tyvek	☒	sarnex-tyvek	☒	coveralls	
Eyes:	☒	safety glasses	☒	sunglasses	☒	goggles	
Head:	☒	hard hat	☒	hearing protection	☒	respirator	

OTHER REQUIRED SAFETY EQUIPMENT/TRAINING

☒	dosimetry	☒	communication	☒	decon
☐	first aid kit	☐	fire extinguish	☐	flares
☐	chains/studs	☐	eye wash/shower		

☐	24 hr HAZWOPER	☒	40 hr HAZWOPER	☒	HAZWOPER Annual Refresher
☒	TLD Program (case by case)	☒	RPP Program	☒	Medical Surveillance
☒	1st Aid/CPR	☒	Other: 1) Defensive Driving		

COMMENTS:

Personnel may be potentially exposed to a wide variety of industrial chemicals during inspections. Primary routes of entry are inhalation, contact, and absorption. Some chemicals encountered could also pose reproductive hazards. Personal air sampling data is not available to document potential inhalation exposures. Further analysis is required. Pursuant to site specific conditions, personnel may be required to wear full-face respirators to minimize potential inhalation hazards. Personnel are routinely exposed to hazardous noise; however, exact sound levels are not known at this time. Further analysis is required. Sources of hazardous noise include heavy equipment such as drill rigs, track hoes, front end loaders, forklifts, etc. Personnel are required to wear ear plugs and/or muffs while working around hazardous noise sources. Employees engage in field activities during all types of weather conditions, to include extreme heat and cold. Thermal stress is a viable hazard; therefore personnel must ensure adequate hydration and appropriate field gear is worn while engaging in field activities. In addition, field acitivies are conducted on various terrain and in remote locations where pits, holes, and trenches are encountered. Personnel need to be cognizant of their surroundings and take evasive actions to avoid contact with such hazards. Due to the nature of industrial facilities, potential fire and or/ explosions hazards are probable. Personnel may be required to wear nomex coveralls and follow site-specific safety/emergency response procedures if the situation dictates. Personnel are usually accompanied by site personnel. Personnel may climb structures, greater than 4 feet above ground surface, to observe potential deficiencies. Personnel climb stairways with approriate handrails and walkways. Personnel must inspect stairways/walkways to ensure structural integrity and/or question site personnel regarding structural stability prior to climbing. Personnel may climb step ladders or extension ladders to inspect equipment or condust sampling. Employees must pay attention to proper ladder selection and electrical shock precautions. Potential ionizing radation exposures may occur while personnel utilize the XRF unit. Personnel wear finger dosimeters and are required to be placed on the Regional Radition Protection Program. REFERENCE PPE HAZARD ASSESSMENT FORM FOR SPECIFIC EXPLANATION OF ALL HAZARDS ASSOCIATED WITH THIS JOB HAZARD ANALYSIS.

CERTIFICATION OF HAZARD ASSESSMENT

SUPERVISOR: FOR T. STUKEY DATE: 8/14/12

SAFETY/HEALTH REPRESENTATIVE: DATE:

Personal Protective Equipment Recommendations

Where engineering and administrative controls are not feasible or sufficient for controlling hazards, PPE must be used to protect workers. The following PPE are recommended for the noted tasks above:

Eye and Face Protection			
X	Safety glasses with side shields		Reflective goggles/face shield
X	Chemical splash goggles		Cutting/brazing/welding eye protection
	Face shield	X	Other: Sunglasses
Head Protection			
X	Hard hat		Helmet, cowl, hood
	Welding helmet/mask		Other:
Foot Protection			
X	Steel-toed safety shoes/boots		Other:
X	Chemical-resistant boots/booties		
Body Protection			
	Apron (splash, work)		Head-reflective garments
	Lab coat		Sleeves (cut-resistant)
X	Coveralls (work, chemical-resistant) Hazard Type: 1)Fire/Explosion; 2) Contaminated Media Type coverall: 1) Nomex; 2)Tyvek and/or Sarnex	X	Other: Appropriate field gear for the weather (thermal/cold stress); Reflective Safety Vest
Respiratory Protection			
X	Respirator	X	Type of respirator: Full-face APR; cartridges based upon constituent of concern
Hand Protection			
	Rubber insulating gloves		Rubber insulating sleeves
	Rubber insulating hoods	X	Other: Leather (use with hand auger or slam bar); Chemical Resistant Gloves (i.e. Nitrile or Neoprene)*

Other:
Ear plugs and/or muffs
Sunscreen
Insect repellent

Site-specific PPE as directed by industrial site (i.e. metatarsal guards, shanks, faceshield, etc). All site-specific PPE will be provided by the industrial facility.

*Chemical resistant gloves must be selected based upon adequate breakthrough times for specific chemicals of concern. Please contact the R6 Health & Safety Office for assistance in glove selection.

PPE Hazard Assessment Form

HEALTH AND SAFETY HAZARDS		
Chemical Hazards		**Description/Mitigation**
X	Vapors/gases	Personnel may be potentially exposed to a wide variety of industrial chemicals during inspections and sampling activities.
X	Dusts/mists/fumes	Personnel may be potentially exposed to a wide variety of industrial chemicals during inspections and sampling activities.
X	Liquid splash	Personnel may be potentially exposed to a wide variety of industrial chemicals during inspections and sampling activities.
Comments:		Primary routes of entry are inhalation, contact, and absorption. Some chemicals encountered could also pose reproductive hazards. Personal air sampling data is not available to document potential inhalation exposures. Further analysis is required. Pursuant to site specific conditions, personnel may be required to wear full-face respirators to minimize potential inhalation hazards. Personnel are required to wear, at a minimum, Level B (tyvek and/or sarnex coveralls, full-face respirators, applicable cartridges for the chemicals of concern, chemical resistant boots/booties and gloves) during sampling activities.
Physical Hazards		**Description/Mitigation**
X	Ergonomics	Personnel may experience repetitive motions, frequent or heavy lifting, pushing, pulling, or carrying of heavy objects; and prolonged awkward postures. Vibration and cold may add risk to these work conditions. The level of risk depends on the intensity, frequency, and duration of the exposure to these conditions. Careful lifting techniques along with secure grips and packing at desk level or higher will reduce potential exposures.
X	Heat — sparks, molten splash, high temperatures	Employees engage in field activities during all types of weather conditions, to include extreme heats. Thermal stress is a viable hazard; therefore personnel must ensure adequate hydration and appropriate field gear is worn while engaging in field activities.
X	Cold — cryogens, cold temperatures	Employees engage in field activities during all types of weather conditions, to include cold weather. Although field activities are performed in termperate climates, cold weather may be a potential hazard. Appropriate field gear must be worn.
X	Electricity	Employees may be exposed to a variety of electrical components at industrial facilities. Personnel adhere to site-specific safety procedures to reduce potential exposures. In addition, personnel are usually accompanied by site personnel.
X	Radiation — ionizing, non-ionizing	Personnel may encounter ionizing radiation, above background levels, while operating the XRF. These instances, although rare, require personal exposure monitoring. EPA employees will be enrolled in the Regional TLD program and assigned a finger dosimeter for use during XRF operations. In addition, personnel also follow site-specific safety procedures.
X	Noise	Personnel are routinely exposed to hazardous noise; however, exact sound levels are not known at this time. Further analysis is required. Sources of hazardous noise include heavy equipment, such as drill rigs, front end loaders, forklifts, etc. Personnel are required to wear ear plugs and/or muffs while working around hazardous noise sources.
X	Fire/Explosion	Due to the nature of industrial facilities, potential fire and or/ explosions hazards are possible. Personnel may be required to wear Nomex coveralls during site entry procedures. Personnel also follow site-specific safety and emergency response procedures if the situation dictates. In addition, personnel are always accompanied by site personnel.
X	Slips/Trips/Falls	Slips/trips/falls are always likely when walking walking through an industrial plant. In addition, many of the field acitivies are conducted outside where pits, holes, and various terrains are encountered. Personnel need to be cognizant of their surroundings and take evasive actions to avoid contact with such hazards.
X	Elevation - Falls	Personnel may climb units, greater than 4 feet above ground surface, to observe potential deficiencies. Personnel climb stairways with approriate handrails, enclosed scaffolding, and/or ladders affixed to various units. Personnel must inspect stairways/walkways to ensure structural integrity and/or question site personnel regarding structural stability prior to climbing. Personnel may climb step ladders or extension ladders to inspect equipment or condust sampling. Personnel must pay close attention to the Duty Rating of the ladder and the combined weight of the user and materials. Select a ladder with the proper capacity. Also, be sure to select a ladder of proper height to reach the work area without overextending. Be aware of wires, electrical devices and live electrical circuits. Metal ladders conduct electricity and can create a danger of electrocution. Failure to read and follow instructions regarding electrical safety could result in serious personal injury or death.
X	Compressions — pinch, crush, rollover	Industrial sites have a wide variety of struck by, caught in between, and compression hazards due to the amount of materials and heavy equipment in place. Personnel may be working near heavy equipment as part of facility operations (forklifts, trucks, etc) and must maintain a safe distance from equipment with moving parts. Reflective safety vests must be worn to ensure they are visible to the maximum extent possible to vehicle movement.
X	Other	Vehicular accidents and traffic are potential hazards encountered while driving to and from municipal plants. Personnel are required to take Defensive Driving Training. Personnel are to use a hands-free telephonic device and are not to text while driving.

Biological Hazards		Description/Mitigation
X	Animals/Insects	Employees may encounter a variety of insects and snakes while in the field. These include snakes, mosquitos, bees, wasps, spiders, feral animals, etc. Personnel need to be cognizant of their surroundings and take evasive actions to avoid contact with such animals/insects.
X	Other	Employees are often in remote locations, in which poison ivy and other infectious plants are present. Personnel must be trained to ensure they are aware of the surroundings and avoid plants to prevent injury/iillness. Cut-resistant gloves should also be utilized.

Completed by: Kendra Gomez & Paul James **Date: July 5, 2011**

SHEMP Review_____ **Date:**_____

HZRCTE
TXT4900112 93

FORMOSA PLASTICS CORP. TEXAS

ISO-9002 CERTIFIED
ISO-14001 CERTIFIED

P. O. BOX 700
201 FORMOSA DRIVE
POINT COMFORT, TEXAS 77978

PHONE: 512/987-7000
FAX: 512/987-2363

November 9, 1999

Certified Mail
Z-244-372-427

ATTN: Mr. Murali Padaki, Project Manager
Corrective Action Section, Team 2
Remediation Division (MC-127)
Texas Natural Resource Conservation Commission (TNRCC)
P. O. Box 13087
Austin, TX 78711-3087

RE: United States Environmental Protection Agency RCRA Cleanup Reforms Initiative Goals of Government Performance Results Act (GPRA) of 1993

Dear Mr. Padaki:

Formosa Plastics Corporation, Texas, is returning the Government Performance Results Act Survey as directed in the letter sent September 10, 1999. The contracting firm of MFG was utilized to research and complete this survey.

Should you require additional information or assistance, please contact David Hill, at (361) 987-7458.

Sincerely,

R. P. Smith
Vice President/General Manager
Formosa Plastics Corporation, Texas

H. 12. b.

CC: C. Russell Lewis, Manager Certified Mail Z-244-372-428
Waste Program, Region 14
Texas Natural Resource Conservation Commission (TNRCC)
6300 Ocean Dr.
Corpus Christi, Texas 78412

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Formosa Plastics Corporation, Texas - Point Comfort Plant
Facility Address: 201 Formosa Drive, Point Comfort, Texas 77978
Facility EPA ID #: TXT 490011293

1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

✓ If yes - check here and continue with #2 below.

____ If no - re-evaluate existing data, or

____ if data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 2

2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be "contaminated"[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rati
Groundwater	✓			RFI
Air (indoors)		✓		(2)
Surface Soil (e.g., <2ft)	✓			RFI
Surface Water		✓		(3)
Sediment		✓		(3)
Subsurf. Soil (>2ft)	✓			RF
Air (outdoors)		✓		(2)

It is alright to say no exposures above Risk Based levels. - Need copies of IH monitoring to support No exposures to non-industrial open source to support this statement.

PG 5

____ If no (for all media) - skip to #6, and enter "YE appropriate "levels," and referencing sufficient that these "levels" are not exceeded.

✓ If yes (for any media) - continue after identifyin "contaminated" medium, citing appropriate "le determination that the medium could pose an u supporting documentation.

____ If unknown (for any media) - skip to #6 and en

Rationale and Reference(s):

(1) For groundwater, surface soil and subsurface soil, identified at several SWMUs (see Enclosure C). T). Interim remedial measures (i.e., soil excavation ar n initiated at several SWMUs. Note that shallow gr t Plant is not potable due to it's high natural salinity (May 1998), the Interim Measures (IM) Implementation Report (April 1994), the annual IM Reports, the annual Groundwater Quality Assessment Plan data reports and the annual EDC Area Groundwater Monitoring Report.

(2) No contamination above risk-based levels has been identified. Air monitoring occurs as part of the facility industrial hygiene program and as required by air permits.

(3) No contamination above risk-based levels has been identified in surface water or sediment. Refer to the Annual Reports, Receiving Water Monitoring Program, Lavaca Bay.

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	NO	NO	NO	NO			NO
~~Air (indoors)~~	—	—	—				
Soil (surface, e.g., <2 ft)	NO	NO	NO	NO	NO	NO	NO
~~Surface Water~~	—	—			—	—	—
~~Sediment~~	—	—			—	—	—
Soil (subsurface e.g., >2 ft)				NO			NO
~~Air (outdoors)~~	—	—	—	—	—		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media – Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

✓ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

___ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

___ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

No potentially completed pathways have been identified. Groundwater and soil contamination have been identified but pathways are not complete based on: (1) for groundwater, the lack of shallow groundwater use in the area: and (2) for soil, excavation/treatment/disposal of contaminated soil in several areas and/or engineering controls to limit potential exposures.

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4. Can the exposures from any of the complete pathways identified in #3 be reasonably expected to be

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 4

"**significant**"[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5. Can the "significant" exposures (identified in #4) be shown to be within acceptable limits?

____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 6

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

YE YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Formosa Plastics Corporation Texas, Point Comfort Plant facility, EPA ID # TXT490011293, located at Point Comfort, Texas under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

____ IN - More information is needed to make a determination.

Completed by (signature) _____ Date 11/9/99
(print) Matthew K. Wickham
(title) Senior Hydrogeologist, MFG, Inc.

Supervisor (signature) N/A Date _____
(print)
(title)
(EPA Region or State)

EPA Section Chief 6EN-HV
8-24-2005

Locations where References may be found:

1) Point Comfort Public Library, Point Comfort, Texas

2) Communications Department, Formosa Plastics Corporation, Texas
Point Comfort Plant

Contact telephone and e-mail numbers

(name) Jim Shephard, Formosa Plastics Corporation, Texas
(phone #) 361-987-7701
(e-mail) jims@ftpc.fpcusa.com

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final

2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: Formosa Plastics Corporation, Texas - Point Comfort Plant
Facility Address: 201 Formosa Drive, Point Comfort, Texas 77978
Facility EPA ID #: TXT 490011293

1. Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?

✓ If yes - check here and continue with #2 below.

____ If no - re-evaluate existing data, or

____ if data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 2

2. Is **groundwater** known or reasonably suspected to be "**contaminated**"[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

✓ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

___ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

___ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Groundwater contamination above risk-based levels has been identified at several SWMUs (see Enclosure C). The primary contaminant is 1,2-dichloroethane (EDC). Interim remedial measures (i.e., soil excavation and/or groundwater recovery and treatment) have been initiated at several SWMUs. Note that shallow groundwater in the area of the Formosa Point Comfort Plant is not potable due to it's high natural salinity. Primary references include the Final RFI Report (May 1998), the Interim Measures (IM) Implementation Report (April 1994), the Quarterly and Annual IM Reports, the annual Groundwater Quality Assessment Plan data reports and the annual EDC Area Groundwater Monitoring Report.

Which SWMU's have had interim measures removal/ remedial actions?

Is there contamination off site? The Quarterly Reports indicate there may be off site migration.

Foot notes:

[1]"Contamination" and "contaminated" describes t
and/or dissolved, vapors, or solids, that are subjec

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

"levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[1] as defined by the monitoring locations designated at the time of this determination)?

____ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[1]).

____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[1]) - skip to #8 and enter "NO" status code, after providing an explanation.

_✓_ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Groundwater contamination is present at three primary areas at the Point Comfort Plant: (1) the Wastewater Treatment Plant Area; (2) the EDC Area; and (3) the VCM Plant Area. Interim remedial measures (IM), primarily soil excavation and/or groundwater recovery and treatment, have been initiated at all three of these areas and quarterly groundwater monitoring is also conducted at each area. Groundwater monitoring data indicate that the migration of contaminated groundwater has stabilized. An area of groundwater contamination near the VCM Plant was identified during a recent investigation, however, the source of the contamination and the nature and extent of contamination have not been determined to date. Two additional groundwater monitoring/recovery wells will be installed in the area when the work plan is approved by EPA. The lithologic data and initial sampling results outlined in the workplan may result in the need for additional investigation or groundwater recovery. Primary references include the Final RFI Report (May 1998), the Interim Measures (IM) Implementation Report (April 1994), the annual and quarterly IM Reports, the annual Groundwater Quality Assessment Plan data reports, the annual EDC Area Groundwater Monitoring Reports, and the VCM Fenceline Investigation Report (July 1999).

Based on current data, it does not appear that contaminated groundwater discharges to surface water at any location at this facility.

[1] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are

permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

_____ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 5

5. Is the discharge of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 6

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented")?

____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

____ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently

unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater monitoring / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

_____ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 8

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

____ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the _____ facility, EPA ID # _____, located at _____. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

IN IN - More information is needed to make a determination.

Completed by (signature) Matthew K. Wickham Date 11/9/99
(print) Matthew K. Wickham
(title) Senior Hydrgeologist, MFG, Inc.

Supervisor (signature) N/A Date _____
(print)
(title)
(EPA Region or State)

Cathy Gilmore
EPA SECTION CHIEF GEN-HX
09-24-2005

Locations where References may be found:

1) Point Comfort Public Library, Point Comfort, Texas

2) Communications Department, Formosa Point Comfort Plant

Contact telephone and e-mail numbers

(name) Jim Shephard, Formosa Plastics Corp., Texas
(phone #) 361-987-7701
(e-mail) jims@ftpc.fpcusa.com

Enclosure C - Schedule for Achievement of GPRA Goals

Facility Name Formosa Plastics
Facility Location Point Comfort, Texas
TNRCC Solid Waste Registration # 31945
TNRCC Compliance Plan/Permit # _____
Date of TNRCC Enforcement Order _____

EPA ID # TXT490011293
Date of EPA Enforcement Order February 1991 (AOC)

Please provide the approval data (month/day/year), submittal date or projected submittal data for Reports; the implementation date or projected implementation date for Stabilization Measure/Corrective Actions; and, the initial control date or projected control date for Human Exposures and Groundwater Releases. Projected dates for goals to occur should result in a facility-wide CA725 and CA750 determination by the year 2005. Make copies of this table, as necessary.

Name of RCRA Unit, SWMU, or Waste Management Area	Final RFI Report (Total extent of contamination determined)			CMS Report (n/a if CMS Report not applicable based upon the RFI Report)			CMI Report (n/a if CMI Report not applicable based upon the RFI and/or CMS Reports)			Stabilization Measures and/or Corrective Actions Implemented (yes, no, or n/a)		Human Exposures Controlled (yes, no, or n/a)		Groundwater Releases Controlled (yes, no, or n/a)	
	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	If yes, implementation date	If no, projected implementation date	If yes, initial date exposures controlled	If no, projected date exposures will be controlled	If yes, initial date releases controlled	If no, projected date releases will be controlled
SWMU No. 1 Storm Water Basin		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	
SWMU No. 2 Equalization Basin		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	
SWMU No. 3 Surge Basin		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	
SWMU No. 4 Emergency Basin		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	
SWMU No. 5 Inactive Deionization Basin		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	

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	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	If yes, implementation date	If no, projected implementation date	If yes, initial date exposures controlled	If no, projected date exposures will be controlled	If yes, initial date releases controlled	If no, projected date releases will be controlled
SWMU No. 6 Aeration Basin		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 7 Sludge Drying Beds		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 8 pH Adjustment Pit		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 9 Primary Clarifier		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 10 Sludge Thickener		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 11 Final Clarifier		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 12 Deep Well		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 13 Inactive Final Clarifier		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 14 Sludge Digester		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	

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	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	If yes, implementation date	If no, projected implementation date	If yes, initial date exposures controlled	If no, projected date exposures will be controlled	If yes, initial date releases controlled	If no, projected date releases will be controlled
SWMU No. 15 Parshall Flume		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 16 Cooling Tower Blowdown		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	
SWMU No. 17 PVC Settling Pits		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 18 Drum Storage Area		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 19 Incinerator		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	
SWMU No. 20 Acid Tanks (VT-765)		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	
SWMU No. 21 Holding Pit (VT-640)		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	
SWMU No. 22 Inactive Chemical Sewer Pump		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	
SWMU No. 23 VCM Wastewater Pit (VT-630)		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	

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	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	If yes, implementation date	If no, projected implementation date	If yes, initial date exposures controlled	If no, projected date exposures will be controlled	If yes, initial date releases controlled	If no, projected date releases will be controlled
SWMU No. 24 EDC Storage Tank (VT-763A)		5/98 (1)				(2) (3), (7)			(4)	5/93 (3) 4/92 (7)		(5)		5/13/93 (3)	
SWMU No. 25 EDC Storage Tank (VT-763B)		5/98 (1)				(2) (3), (7)			(4)	5/93 (3) 4/92 (7)		(5)		5/13/93 (3)	
SWMU No. 26 EDC Storage Tank (VT-102)		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 27 Laboratory Wastes Area		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 28 Decoking Pit		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 29 Deionization Regeneration Waste Pit		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 30 Boiler Blowdown Sump		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 31 Used Oil Storage Area		5/98 (1)		N/A (9)			N/A (9)			N/A (9)		N/A (9)		N/A (9)	

Name of RCRA Unit, SWMU, or Waste Management Area	Final RFI Report (Total extent of contamination determined)			CMS Report (n/a if CMS Report not applicable based upon the RFI Report)			CMI Report (n/a if CMI Report not applicable based upon the RFI and/or CMS Reports)			Stabilization Measures and/or Corrective Actions Implemented (yes, no, or n/a)		Human Exposures Controlled (yes, no, or n/a)		Groundwater Releases Controlled (yes, no, or n/a)	
	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	Date Approved	If not approved, provide date submitted	If not submitted, projected submittal date	If yes, implementation date	If no, projected implementation date	If yes, initial date exposures controlled	If no, projected date exposures will be controlled	If yes, initial date releases controlled	If no, projected date releases will be controlled
SWMU No. 32 Empty Container Storage Area		5/98 (1)		N/A (6)			N/A (6)			N/A (6)		N/A (6)		N/A (6)	
SWMU No. 33 Chemical Sewer System		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	
SWMU No. 34 Storm Water Sewer System		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	
SWMU No. 35 Secondary Containment EDC		5/98 (1)				(2) (3)			(4)	5/13/93 (3)		(5)		5/13/93 (3)	

Facility-Wide Environmental Indicators. Please indicate if the Environmental Indicators have been achieved on a facility-wide basis by circling the appropriate response in the boxes to the right (yes, no, or n/a). If yes, provide the date the Environmental Indicator was achieved. If no, provide the projected date the Environmental Indicator will be achieved. Please note that it may not be necessary to achieve all the interim goals (CMS/CMI approved or Stabilization Measures/Corrective Actions implemented) to achieve a CA 725 or CA 750 determination.

	Human Exposures Controlled CA 725 Yes - No - n/a	Groundwater Releases Controlled CA 750 Yes - No - n/a
Date achieved	Yes (5)	Yes (5/13/93)
If not achieved, date projected to be achieved		

Footnotes:

(1) The revised Final RFI Report was submitted to EPA in May 1998 and has not been approved nor commented on by EPA.
(2) The CMS Report will be submitted 180 days after approval of the Final RFI Report.
(3) Remedial activities (groundwater recovery and treatment) were initiated as Interim Measures in May 1993 and are ongoing.
(4) Concurrent with Final CMS Report
(5) N/A - no potential human exposures were identified and/or potential exposures are controlled by industrial hygiene program, engineering controls and/or administrative controls.
(6) No Further Action (NFA) recommended in Final RFI Report.
(7) Partial closure completed (demolition of tank, retaining wall, tank pad and rings; removal of surface soil).
(8) This unit is closed (no longer in service).